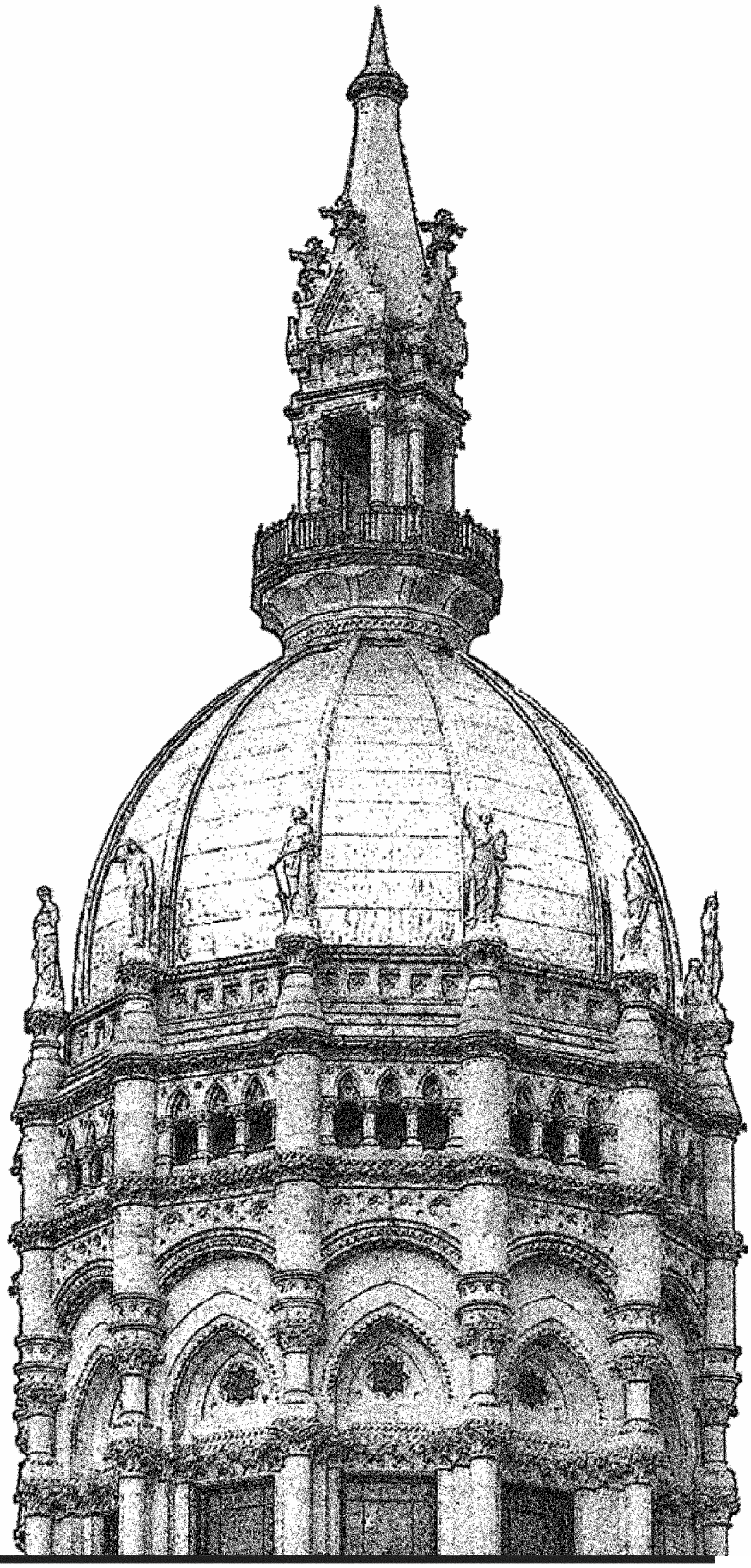
Assessment of Connecticut's Implementation of E-Government

DECEMBER 2010



PRI

Legislative Program Review and Investigations Committee

Connecticut General Assembly

CONNECTICUT GENERAL ASSEMBLY
LEGISLATIVE PROGRAM REVIEW AND INVESTIGATIONS COMMITTEE

The Legislative Program Review and Investigations Committee is a bipartisan statutory committee of the Connecticut General Assembly. It was established in 1972 to evaluate the efficiency, effectiveness, and statutory compliance of selected state agencies and programs, recommending remedies where needed. In 1975, the General Assembly expanded the committee's function to include investigations, and during the 1977 session added responsibility for "sunset" (automatic program termination) performance reviews. The committee was given authority to raise and report bills in 1985.

The program review committee is composed of 12 members. The president pro tempore of the Senate, the Senate minority leader, the speaker of the house, and the House minority leader each appoint three members.

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LEGISLATIVE PROGRAM REVIEW
& INVESTIGATIONS COMMITTEE

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Executive Summary

Assessment of Connecticut's Implementation of E-Government

The Legislative Program Review and Investigations Committee (PRI) voted in June 2010 to conduct a study to assess Connecticut's implementation of e-government (meaning electronic government). E-government is described in different ways, but a general meaning is the "use of information technology to support government operations, engage citizens, and provide government services."[1] The committee in particular was interested in Connecticut's efforts to ensure citizens and businesses have online access to desired information and services.

As directed by the study scope, the study examined the organizational structure in place in Connecticut to prioritize, design, implement, manage, and evolve e-government services. Best practices based on existing literature were evaluated and states considered leaders in applying e-government principals were compared. An inventory of e-government features available on Connecticut's state agency websites was also developed.

Best Practices

There are a number of best practices discussed in the literature reviewed that impact the success of a state's e-government project, including:

- *strong executive branch leadership* to cultivate an ongoing e-government culture within state government;
- *a strategic planning process* in order to ensure planning, coordination, and prioritization among individual agencies, given the limited financial resources available to state government in developing new e-government initiatives;
- *attention to the design of the state's main portal* because it often serves as the main entry into the various state agency websites;
- *collection and review of performance measurement data* to better gauge visitor satisfaction with a state's web presence; and
- *commitment to funding* since IT projects tend to be costly.

[1] Sharon Dawes, *The Future of E-Government*, Center for Technology in Government University of Albany, State University of New York, 2007. Http://www.ctg.albany.edu/publications/reports/future of egov (April 2010).

Connecticut's E-Government Implementation Structure and Planning Process

E-government initiatives involve both a technical aspect (e.g., hardware, software, and other technological design and support) and a substantive government business aspect (e.g., business planning and assessing client needs). Each is equally important and must work harmoniously to produce a successful e-government project. While the technical aspect is handled by either Department of Information Technology (DOIT) and/or other agency IT staff, all substantive business decisions for e-government initiatives remain with the individual agency.

The program review committee found Connecticut's governance structure for planning, developing, and implementing e-government services is ineffective e. E-government improvements and initiatives appear ad hoc and sporadic rather than systematic. Primary decision-making responsibilities are fragmented across agencies without focus or direction. There is not a single recognizable statutory authority for all e-government functions.

Further, the committee found Connecticut's information technology strategic plan, prepared by DOIT, to be overly broad, provide limited guidance for strengthening the state's e-government presence, and not wholly accessible to the public. The existing planning process is weakened by inadequate agency IT plans, limited involvement by the executive steering committee, and minimal cross collaboration efforts.

Connecticut's Web Presence

The committee found that states considered leaders in e-government concentrate efforts on enhancing their main state portals as the gateways to online services for website visitors. Connecticut's current web presence is the state's main web portal (CT.gov), and a series of government branch and agency websites. Currently, there is no effective mechanism in Connecticut, formal or informal, to guide e-government in a deliberative, purposeful way that includes all stakeholders—such as agencies, municipalities, businesses, citizens, and customers. Rather, most web-based service improvements arise from individual departmental interests instead of an overall e-government strategy that prioritizes online services through executive branch leadership efforts.

The committee found Connecticut's web presence replicates the organizational structure of the state, and thus is not particularly user friendly. Both CT.gov and agency websites in general fail to achieve consistently high levels of sophistication through the use of extensive, coordinated offerings of online services.

In addition, an examination of executive branch agency websites revealed that while they generally have some usability features (e.g., links to the state homepage, contact information), they lack others (e.g., help features, site map). Furthermore, there are many technologies that are established in the private sector and used extensively by other state governments (e.g., social media, mobile technology), but are not a systematic part of the Connecticut web presence.

Best practices regarding website design suggest that there should be an opportunity for website visitors to provide input about the website to a webmaster, the individual(s) responsible for maintaining a website. There are key tools available that help measure how well a state's

main portal and individual agency websites meet citizen and business user needs. These tools include: 1) the use of web traffic statistics; 2) feedback links on a state's main portal and agency websites that allow users to electronically submit comments to a webmaster about the website; and 3) the use of online surveys to solicit users' opinions. States that use these tools target site content to meet user need and hone marketing of online services to increase citizen and business satisfaction with online experiences. No web traffic statistics have been collected on the state's main portal since 2005.

Connecticut's main portal, CT.gov, serves as a gateway to all three branches of state government, not just the executive branch. Marketing the state portal is an important part of a state's overall strategy because it increases individuals' knowledge of the types of information and services available in a single location. Promoting "CT.gov" without analyzing its use does not give a clear picture of whether citizens are finding the information they need or completing the online tasks they want to perform.

Based on the study findings, the committee makes a number of recommendations. First, some short-term changes are recommended to improve the functionality of the state's main portal, CT.gov, by implementing best practices related to website usability. The committee believes, however, to be a leader state, a long-term strategy must be adopted. The strategy should be guided by an e-government board and an e-government director within DOIT so that long-term opportunities can be implemented. Such a focus could replace how services are currently accessed (i.e., on an agency-by-agency basis) and help develop a better approach to delivering "one-stop" online services for those functions that cut across agencies.

The intent of the other recommendations concern ensuring a customer-centered focus to the development of e-government in the state by improving website design and content.

Committee Recommendations

1. **DOIT should amend the state web template to include:**

    - **a site map;**
    - **translation services for foreign language accessibility;**
    - **general and program specific "frequently asked questions" pages; and**
    - **user help features.**

2. **The list of online services on CT.gov should be expanded through the inclusion of all agency transactions and selective inclusion of informational features, such as downloadable guides. In addition, the following features should be made available on the state's web portal, CT.gov:**

    - **downloadable databases; and**
    - **downloadable forms.**

3. **The services, databases, and forms features should be aggregated lists from agency online offerings and should be, at a minimum, searchable by keyword and indexed by customer, by function, by agency, and alphabetically. Where possible,**

presentation of new and existing features on the web portal should allow for user customization and/or personalization.

4. **All executive branch state agencies, except those exempted by statute or the Department of Information Technology, shall use CT.gov for web hosting services and adopt the Department of Information Technology-created template for state websites.**

5. **The Department of Information Technology should establish a webpage of policies that includes the state's privacy, security, and accessibility policies as well as any other policies deemed necessary. A link to this policy page should be included as part of the website design template, in place of the separate links to the state privacy policy and website accessibility policy. All state agency websites should contain a link to the state policy page.**

6. **The Department of Information Technology, in collaboration with the E-Government Board, should review and revise the state's website policies not less than once a year. The review and adoption date of the latest version of the website policies should be clearly published with the policies along with a summary of any major changes.**

7. **The Department of Information Technology should review the social media policy annually and revise it if deemed necessary.**

8. **Connecticut must establish a governance structure to facilitate the development, implementation, and evolution of e-government.**

9. **An e-government board shall be established, with 19 members consisting of mandatory representatives from the executive branch and constitutional offices, and appointments made by the governor, legislature, and judicial department.**

   Specifically, the board membership shall consist of:

   - **Four mandatory board members: the DOIT CIO; the Secretary of the Office of Policy and Management, or designee; the Secretary of the State, or designee; and the State Librarian, or designee.**

   - **The governor shall appoint one executive state agency representative from each of the following eight state service areas:**
     - **Human Services;**
     - **Health;**
     - **Transportation;**
     - **Regulation and Protection;**
     - **General Government Administration;**
     - **Conservation and Development;**
     - **Education; and**

- **Judicial.**

- **The legislature shall have six appointments:**
  - **The Speaker of the House, the House majority leader, and the House minority leader shall appoint a municipal representative, one representative from the business sector who is not an information technology vendor for the state, and one member of the public, respectively.**
  - **The Senate Pro Tempore, the Senate majority leader, and the Senate minority leader shall appoint a municipal representative, one representative from the business sector who is not an information technology vendor for the state, and one member of the public, respectively.**

- **The Chief Court Administrator shall appoint one representative from the judicial department.**

The Governor shall appoint the chair of the board. The chair, in consultation with the members, shall establish the board's by-laws. The legislative and judicial appointments shall be non-voting board members. The term for appointed members is three years. The board shall meet no less than on a quarterly basis. Vacancies shall be filled in the same manner as the original appointments. A majority of the board shall constitute a quorum.

The board may form subcommittees on specific topics as necessary for either ongoing, major activities (standing subcommittees) or short-term activities (ad hoc subcommittees) that cease when the activities are completed. The board chair shall task the specific mission, charge, or set of issues to be addressed by the subcommittee(s).

The board shall provide advice on the development of Connecticut's e-government visions and goals, and provide input for strategic direction and priorities. The board shall annually report its recommended strategic proposals and priorities for e-government to the CIO for inclusion in the strategic plan.

10. **Among the board's responsibilities are to identify business and customer service needs and develop recommended strategies and actions to the CIO for guiding e-government initiatives. Specific board responsibilities shall include to:**

    - **develop and adopt an e-government definition;**
    - **provide input to DOIT on the use of CT.gov as the centralized source for state government information and services;**
    - **generate priorities for new online services;**
    - **recommend common functions among state agencies that could be shared;**

- **consider whether to propose convenience fees for any online services;**
- **assist in the selection and development of web traffic statistics to be compiled; and**
- **develop and adopt an annual strategic plan for e-government.**

DOIT shall provide staff resources for the board.

11. **E-government should be a recognized, dedicated function within DOIT. At a minimum, the responsibilities of statewide e-government services and functions should be assigned to a director. The e-government director must:**

    - **support the expansion of the delivery of state online services through the state's main web portal;**
    - **advise the CIO on the resources required to develop and effectively administer electronic initiatives;**
    - **recommend necessary changes related to strategies and priorities for e-government;**
    - **promote innovative uses of information technology by agencies, particularly initiatives involving multiagency collaboration;**
    - **coordinate with local and federal government when appropriate for collaborative online efforts;**
    - **assist in establishment of policies and standards for e-government services;**
    - **examine common performance measures and web trends to determine effectiveness;**
    - **participate in DOIT's system development methodology process to become aware of ongoing and proposed e-government projects; and**
    - **periodically examine other states who are noted as leader states for e-government to determine if Connecticut needs to revise its strategies.**

    The director shall prepare an annual report of e-government projects and services, including a complete list of services offered through the state's main portal. The report should also include potential new online services and summarize results of performance measures and web statistics compiled for e-government. The results shall be provided to the e-government board.

12. **There should be a strategic plan specific to e-government in addition to the statewide strategic plan for information technology. The CIO should prepare the e-government strategic plan in consultation with the new e-government director and board.**

    The state's overall e-government strategic plan should include a clear strategy for providing online services for different user groups according to their needs (citizens, business, visitor, government, etc).

Connecticut's strategic plan should be developed in partnership with state agencies and other relevant stakeholders through the newly formed web board. Activities to inform and guide the plan should include:

- **planning sessions and surveys with the web board and state agency officials;**
- **in-depth participation in and review of leading e-government issues, trends, and web analyses;**
- **strategic planning sessions, discussions, and surveys with Connecticut's IT staff and leadership;**
- **engagement with Connecticut citizens and businesses on preference and needs; and**
- **discussions and feedback from leading researchers.**

Across the four-year planning cycle, annual updates and adjustments should be made, along with reports on progress to stakeholders.

13. **C.G.S. 4d-7 (c) shall be amended to include a mandate for the annual submission of an agency IT plan by each executive branch agency. The agency IT plan must be prepared in compliance with the DOIT prescribed template unless the CIO has specifically authorized an exemption for the agency. At a minimum, the agency IT plan must include:**

    - **the information technology priority objectives of the agency;**
    - **major planned or ongoing initiatives related to information technology;**
    - **specific IT projects to assist or provide service to the public;**
    - **steps taken to conduct transactions electronically;**
    - **a summary of web statistics compiled and how they are used;**
    - **any IT initiatives to coordinate with other state and local governmental entities; and**
    - **efforts the agency has taken to develop public and private partnerships to accomplish the information technology objectives of the agency.**

14. **There should be a cross boundary advisory group led by the new director of e-government. The director of e-government should solicit participation in the advisory group to foster various IT partnerships including: intra-agency (state agency-to-state agency), intergovernmental (e.g., state agency to municipal), and public-private (e.g., state and CERC). The group tasks should include to:**

    - **facilitate collaborative agreements;**
    - **identify opportunities, incentives and barriers;**

- **develop strategic risk management of cross collaboration initiatives; and communicate potential cross collaboration strategies with the web board.**

15. **DOIT should incorporate a staff resource impact analysis component into the SDM process. Similar to the guidance DOIT provides to agencies to develop cost-benefit analysis, DOIT should assist state agencies to develop criteria and common methodology to estimate resource impact for IT initiatives.**

16. **The newly established E-Government Board shall adopt performance measurement goals for the state's main portal. Such goals shall include targets for implementing new online services, and reaching specific web metric benchmarks, including but not limited to increasing the utilization of existing and new online services (i.e., adoption rates).**

    The Department of Information Technology, in consultation with the E-Government Board, should develop an online user survey that captures visitor experience and satisfaction with the state of Connecticut's online presence and offer the feature through the state's main portal and template.

    The Department of Information Technology shall provide the E-Government Board with web analytics for the main portal, including those that measure progress toward achieving any identified benchmarks so the board may determine if goals set by the board for the main portal have been met. The Department of Information Technology shall also semi-annually provide the board with an aggregated report showing the results of the online survey.

    Based on its evaluation of web statistics on the main portal and any feedback received through surveys or other methods, the E-Government Board shall recommend changes to the portal's design and/or content, establish new goals for the portal if previously established goals have been met, and use such information in assisting in prioritizing online service to be offered to the public. The Department of Information Technology shall consider the board's recommendations when making changes to the state portal, CT.gov.

    The Department of Information Technology shall report web traffic statistics for all state agencies not less than annually and post them on its website.

17. **The Department of Information Technology should identify strategies for state agencies to consider in improving location of website content, when appropriate. Each state agency should have a website workgroup that meets periodically to discuss agency website content and presentation and how best to improve it based on web analytics or other feedback provided.**

18. **The E-Government Board shall adopt a marketing strategy to brand "CT.gov" as the primary website to enter for information and services about state government. The Chief Information Office within the Department of Information Technology shall implement the strategy.**

Introduction

Study Overview

The Legislative Program Review and Investigations Committee (PRI) voted in June 2010 to conduct a study to assess Connecticut's implementation of e-government (meaning electronic government). E-government is described in different ways, but a general meaning is the "use of information technology to support government operations, engage citizens, and provide government services."[2] The committee in particular was interested in Connecticut's efforts to ensure citizens and businesses have online access to desired information and services.

PRI Study Scope Areas of Analysis

The areas of analysis identified in the PRI study scope were: 1) an examination of the organizational structure in place in Connecticut to prioritize, design, implement, manage, and evolve e-government services; and 2) an evaluation of best practices based on existing literature and comparisons to states considered leaders in applying e-government principals. An inventory of e-government features available on Connecticut's state agency websites was also developed.

Overview of Findings and Recommendations

Connecticut has clearly expanded the "use of information technology to support government operations, engage citizens, and provide government services," as e-government is described, since the inception of the state website, CT.gov, in 2002. The program review committee found, though, that improvements and initiatives appear ad hoc and sporadic rather than systematic. Web-based service improvements most often arise from individual departmental interests instead of an overall e-government strategy that prioritizes online services as a statewide goal. The current structure within which e-government (as well as the broader, but closely connected, function of information technology) is developed, planned, managed, and implemented is diffuse and ineffective. Currently, there is no effective mechanism, formal or informal, to guide e-government in a deliberative, purposeful way that includes all stakeholders—such as agencies, municipalities, businesses, citizens, and customers.

In reviewing Connecticut's current website presence, the committee found that the user-friendliness of Connecticut's website could be improved. Certain features that are considered best practice are missing from the web template used by most state agencies. Further, as Connecticut's web presence mirrors the physical structure of state government, a user is required to know or find out which agency or agencies have jurisdiction over the particular subject or program of interest. This is contrary to best practice that calls for websites to be focused on the user and activities, not on recreating the physical organization of government functions.

2 Sharon Dawes, *The Future of E-Government*, Center for Technology in Government University of Albany, State University of New York, 2007. http://www.ctg.albany.edu/publications/reports/future of egov (April 2010).

Based on the study findings, the committee makes a number of recommendations. First, some short-term changes are recommended to improve the functionality of the state's main portal, CT.gov, by implementing best practices related to website usability. The committee believes however, to be a leader state, a long-term strategy must be adopted. The strategy should be guided by an e-government board and an e-government director within DOIT so that long-term opportunities can be implemented. Such a focus could replace how services are currently accessed (i.e., on an agency-by-agency basis) and help develop a better approach to delivering "one-stop" online services for those functions that cut across agencies.

The intent of the other recommendations concern ensuring a customer-centered focus to the development of e-government in the state by improving website design and content. The program review committee found that states considered leaders in e-government concentrate efforts on enhancing their main state portals as the gateways to online services for website visitors. By doing so, it is easier for citizens to locate the online services they need and for the state to market online services to its citizens and businesses.

Study Methodology

The review of e-government in Connecticut by PRI focused on three core areas of analysis:

- in-depth examination of four states considered leaders in state portal development as a gateway to online service delivery;
- results of an extensive PRI committee survey of Connecticut's executive branch agencies that sought to:
    - obtain opinions and information on state agency experiences in planning and implementing e-government initiatives, and
    - determine responsibility for state agency website design content placement; and
- identification and evaluation of the features and services on Connecticut websites from the viewpoint of citizens and businesses.

Leader states. Maine, Massachusetts, Michigan, and Utah were the four states selected for in-depth review. These states were chosen for a variety of reasons including their:

- achievement of high ranking and evaluation scores in national studies;
- receipt of numerous awards; and/or
- location in New England.

Information on these other states was collected in a number of different ways, including website and literature research, as well as interviews with chief information officers, program directors, and various IT personnel. Each state's main portal was examined for content, design, and navigation. In addition, Connecticut was compared to each state in a number of areas pertaining to the use e-government including:

- statutory provisions (e.g. definition of e-government);
- governance structure;
- strategic planning;
- management and funding of initiatives;
- availability of online services; and
- collaboration with federal and local government.

Profiles for each state reviewed are provided in Appendix A.

E-governance funding models in other states. States use a variety of sources to fund e-government projects. These sources include general fund appropriations and subscription and other user fees for individuals to conduct transactions online. Twenty-three states outsource portal development and management, all with a company called NIC that specializes in developing online services based on a transaction fee approach. Under these outsource contracts, the states do not pay NIC; NIC is compensated from the fees charged by the states. Other states rely on general state funding of e-government projects.

The NIC model, in general, creates a subsidiary based in the state with which NIC has a contract and uses a transaction-based funding approach, if not prohibited by statute. Under this approach, the state government charges a modest fee (in addition to any existing statutory fees, for example, license renewal fees) to provide online services. These fees are primarily targeted at high-volume business users, while broader services for citizens are generally free. NIC is compensated from the fees; the states pay nothing "out-of-pocket".

In addition to the provision of fee-based online services to their customers, both Utah and Maine use NIC as vendors for portal management. Massachusetts and Michigan manage their own web portals with vendor support when necessary. Further discussion on funding models is provided in Appendix B.

Inventory and evaluation of executive branch agency websites. Program review staff systematically reviewed all executive branch agency websites using a set of objective criteria derived from the methodologies of two prominent nationwide reviews of states' web presence. In total, 65 agency websites were reviewed. The questions were divided into five main categories:

- usability;
- privacy and security;
- contact and participation;
- content; and
- services.

The full list of questions, along with a summary of results, is available in Appendix C.

In addition, committee staff also identified all available online transactions in which there was two-way communication between the user and the agency, such as when a license could be renewed online. Highlights of the review are that, of 65 executive branch websites:

- 79 percent use the DOIT created web template;
- 85 percent link to the state's privacy policy;
- 95 percent have online publications (e.g., newsletters, reports);
- 86 percent offer downloadable forms; and
- 45 percent include two-way online services (e.g., renewing a license).

Survey of executive branch agencies. Because e-government responsibilities are spread across state agencies, information about how state agencies handle their activities is currently lacking. To better understand state agency activity and experience, committee staff surveyed executive branch agencies for information and opinions on a variety of topics, including:

- website planning and governance;
- website clientele; and
- technical issues surrounding web-based projects.

The survey was administered electronically and contained 32 questions. The survey was sent to executive branch agencies via email, typically to a legislative liaison, commissioner, communications director, generic agency address or other staff as deemed necessary. Of 57 possible respondents, 51 replied for an 89 percent response rate. Survey questions and results are provided in Appendix D, along with a list of agencies that did not respond. Several agencies associated with the executive branch were specifically excluded from the study, including the constitutional offices and colleges and universities.

Survey respondents were informed that aggregated results would be presented to keep individual replies confidential. Survey results are noted throughout the report. Some of the survey highlights are:

- one-third of the 50 agencies responding do not have a business plan and, about another third have a business plan but no formal online strategy is contained in it (a business plan should contain operational objectives and contain details on how they are to be realized);
- almost two-thirds of the 50 agencies responding reported DOIT personnel have little to no responsibility for initially developing and planning agency web projects;
- less than half of the 44 agencies responding to the question link to a municipal government site or contact list;
- beyond using the DOIT-established web template, survey respondents stated that a mix of individuals were responsible for determining website content including agency leadership (40 agencies), program personnel (23 agencies), and communication or planning staff (19 agencies); and

- 59 percent of 51 agencies review web traffic statistics, which can be used to improve the agency's website.

Report Content

- **Chapter I (p. 7): Discusses the rise in internet use over time.** The chapter examines the breadth of e-government efforts and stages of e-government development. It also provides information on trends in internet usage and discusses some emerging technology, such as use of mobile devices to access the internet.

- **Chapter II (p. 13): Describes state rankings, suggested approaches, and consumer interests in e-government.** The chapter identifies the states that are considered leaders in terms of design and function of their websites, based on rankings issued by various organizations on state e-government websites. Key factors influencing development and maintenance of state-of-the art state websites are described.

- **Chapter III (p. 23): Describes Connecticut's Websites Relative to Best Practices.** Presents the results of the PRI committee's evaluation of Connecticut's web presence (i.e., CT.gov and agency websites) and online services. It also provides information on implementation of best practices for standards and policies.

- **Chapter IV (p. 41): Explains state statutes and organizational infrastructure related to e-government.** The major roles and responsibilities as they relate to e-government projects, the current strategic plan, and the process used by DOIT to facilitate e-government projects are explained. Chapter IV also examines the general organizational structure in place to provide information technology services among Connecticut state agencies. (Appendix E provides a history of Connecticut's information technology management.) This chapter also discusses e-government development including the topics of governance structure; strategic planning process, collaboration efforts; and project development.

- **Chapter V (p. 69): Describes ways to create a more customer-centric focus for providing electronic information and services to website visitors.** Ensuring a customer-centric focus requires the use of tools to assist in better website design and content management, and marketing the state's main portal, CT.gov.

- **Appendices:** The report also contains 14 appendices.

Chapter I

Website Development and Trends in Internet Usage

Breadth of E-Government Efforts and Cost-Savings

Many types of e-government projects have been implemented by states over the last decade. Many are designed to meet citizen and business expectations by making it easier to access government information or conduct transactions online without having to physically visit a government office or use fax or mail. Some e-government initiatives involve providing information about specific programs or policies online, or allowing for transactions to be conducted within a single agency, while others cut across several executive branch agencies or even among different branches or different levels of government.

Much of the literature reviewed by PRI staff notes that e-government initiatives may lead to savings. However, the upfront costs of new technology may be substantial and costs can even increase when multi-channels of connection need to be maintained for citizens who do not have access to the internet or are unwilling to conduct online transactions. E-government may allow a state to do more with the same amount of resources or allow staff to be redeployed for new functions.

Stages of E-Government Development

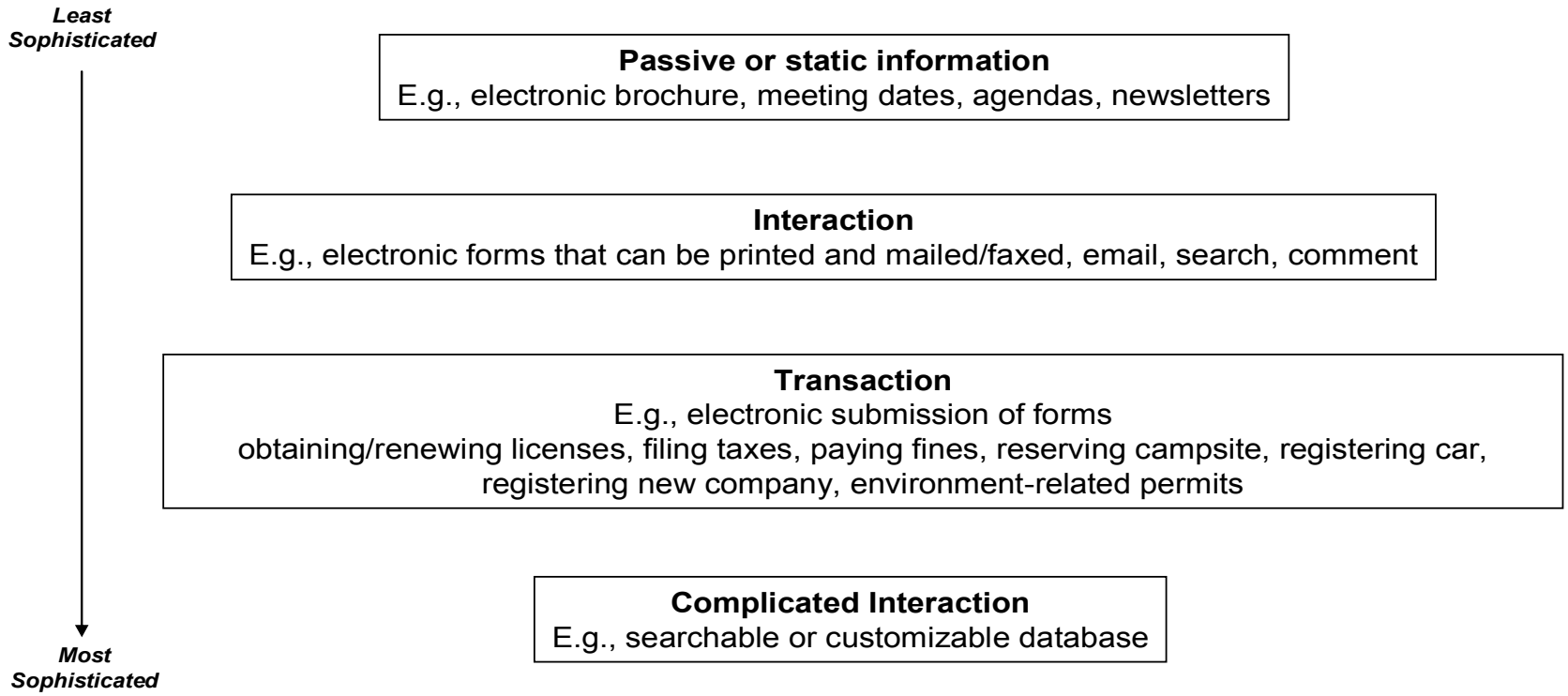
Information technology, both existing and emerging, can provide extensive opportunities for: better delivery of government services to citizens; more convenient transactions for business and industry; increased transparency of and access to government information; and more efficient and cost-effective government management. This use of technology shows itself primarily through websites as the entry into information and services.

Figure I-1 shows the range of sophistication in website development. At the most basic level, information such as newsletters or meeting agendas is posted to a website. Such information it is static and increases government transparency. The next level is interactive and allows the website user to perform low-level one-way interactions, which may include the ability to download a form that can be submitted by mail or fax upon completion. The third level is a higher-level two-way interaction that allows for actual electronic submission of forms and/or complaints. It also can allow for secure financial transactions to occur with credit cards. The highest level allows website visitors to download a database and customize the data to fit the user's needs.

E-Government and Public Expectations

As internet usage continues to increase, expectations by citizens and businesses to obtain information and conduct transactions at their own convenience day or night, without physically having to visit a government office, escalates. Citizens have come to expect more government transparency, and for government to keep pace with technology like private businesses. E-government can also promote better government program services and administration by

Figure I-1. Website Sophistication Levels



Source: PRI staff analysis

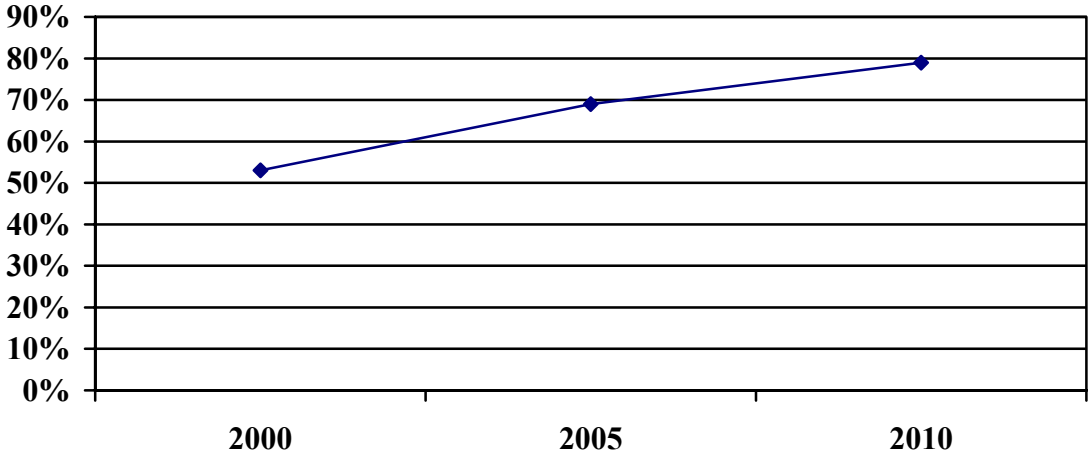
allowing different agencies and levels of government to share data between government offices, as well as improve services to citizens and businesses. An example of this is the multi-year modernization of the Department of Motor Vehicles (DMV) online system, which is discussed in detail in Appendix F. The appendix also describes two other different e-government projects by giving case examples of on-going e-government projects to illustrate the diverse nature of e-government initiatives and highlight the challenges faced and solutions used.

Internet Use Changes Over Time

The Pew Research Center Internet and American Life Project conduct periodic surveys on internet usage among the U.S. adult population based on a variety of demographics.[3] The program review committee examined its research on national internet usage since 2000.

Rise in internet usage. Figure I-2 shows the rapid rise in internet use at three points in time over a ten-year period. From 2000 to 2009, the percent of internet users (U.S. adults age 18 or older) among the population rose from 53 percent to 74 percent.

Figure I-2. U.S. Adult Internet Users as a Percent of Total Adult Population Age 18 years and Older



Source: Pew Internet and American Life Project Surveys

How Do U.S. Adults Use the Internet?

National internet use. The Pew internet survey collects information on what people do when they go online. Table I-2 shows the 20 most popular activities (out of 69 total activities on the survey) and the date the question was last asked. Percentages would likely be higher today, since internet use overall has increased. Pertinent to this study, in November 2008, 59 percent of survey respondents indicated that they had visited a local, state or federal government website.

3 Pew Research Center, Pew Internet and American Life Project (www.pewinternet.org), 2010.

Table I-2. Top 20 Reported Internet Activities for U.S. Adult Users.		
Activity	***% of Internet Users***	***Last Asked***
Send or read e-mail	89%	Sept. 2009
Use a search engine to find information	88%	April 2009
Search for a map or driving directions	86%	Dec. 2006
Look for health/medical information	83%	Dec. 2008
Look for information online about a service or product you are thinking of buying	83%	Feb.-March 2007
Check the weather	81%	Sept. 2007
Buy a product	76%	April 2009
Get news	75%	April 2009
Go online just for fun or to pass the time	72%	April 2009
Buy or make a reservation for travel	66%	April 2009
Watch a video on a video-sharing site like YouTube or Google Video	62%	April 2009
Look online for new or information about politics or the upcoming campaigns	60%	April 2009
Visit a local, state or federal government website	**59%**	**Nov. 2008**
Look for "how-to," "do-it-yourself" or repair information	59%	Aug. 2008
Do any banking online	57%	April 2009
Research for school or training	57%	Jan. 2005
Look up phone number or address	54%	Feb. 2004
Look online for information about a job	52%	April 2009
Take a virtual tour of a location online	51%	Aug. 2009
Source: Pew Internet & American Life Project Tracking Surveys (March 2000 – September 2009)		

Highest internet users by state. The U.S. Census Bureau, through its Current Population Survey, maintains statistics on internet use for individuals who are age three years and older from the October 2009 Current Population Survey. Table I-3 shows the ten states with the highest percent of internet users, with Connecticut ranked 6th at 75.2 percent. (The three New England states that did not make the top ten are Massachusetts (74.4 percent) and Maine (72.6 percent), and Rhode Island (70.6 percent).)

Table I-3. Top Ten States with Highest Percent of Internet Users	
State	***Percent***
Alaska	79.2
Washington	78.8
Utah	77.9
Vermont, Minnesota	76.1
Oregon, New Hampshire	75.5
Connecticut	**75.2**
Wisconsin, Colorado	74.9
Source: www.census.gov/cps	

Connecticut internet users. The same survey also collects information on internet usage by household and selected characteristics and by state on whether individuals access the internet from any location (either inside or outside the householder's home). The U.S. average was 68.4 percent. Across all the states, New Hampshire had the greatest percent of individuals

living in households with internet access (85 percent) compared to Mississippi at 57 percent. Connecticut was ranked fourth at 82 percent.

Emerging Technology and Internet Use

Broadband use. Accessing the internet through a broadband connection is considered "high speed internet" because it carries data faster than a dial-up connection. Sixty-three percent of U.S. adults surveyed in May 2009 had broadband internet connections at home, up from 55 percent one year earlier. Adoption of broadband has increased among seniors, low-income Americans, and rural residents. Only 7 percent of Americans are dial-up internet users at home, a figure that is half the level it had been two years ago. A plurality of dial-up users said cost was the reason they've yet to make the change to broadband. The remaining 30 percent are not home internet users.

Mobile devices. Forty percent of all Americans have gone online with a cell phone to check email, access the internet for information, or send instant messages.[4] Many states have already anticipated the growth in the use of mobile devices to go online and have developed mobile applications so that citizens can access information quicker and more efficiently. It is generally accepted by IT researchers that use of mobile devices will continue to increase and likely will replace desktop computers in the next five to seven years.

As the prevalence of mobile and other smart devices with internet connectivity increases, so does the need for e-government initiatives that allow users of these devices to access government websites. As younger generations age, technological expectations will continue to rise and states must keep pace with innovations in order to keep citizens engaged. As noted earlier, this will require investments, but savings might be achieved through in shifts in workload, staff attrition, and reduction of costs associated with paper, postage, and printing.

Web-based social networking. Web-based social networking occurs through a variety of websites that allow users to share content, interact and develop communities around similar interests. Some states have joined these networks as a way to keep citizens informed and engaged. Examples of social networking websites include Facebook, LinkedIn, and Twitter. Twitter, created in 2006, is a social networking service that lets users send and read other users' messages, which are called tweets. Tweets are text-based posts of up to 140 characters displayed on the author's profile page that can be accessed directly through the Twitter website or through compatible external applications, such as smartphones. Twitter had 400,000 tweets posted per quarter in 2007, growing to 4 billion tweets in the first quarter of 2010.

4 Pew Research Center, Pew Internet and American Life Project Survey, *Mobile Access 2010*.

Chapter II

State Rankings and Key Factors Associated with Successful E-Government

Much has been written about the use of information technology by state governments, especially in terms of how e-government is used to provide wider access to government information to citizens and services to customers, both individuals and businesses. Various entities evaluate this state government activity, based on criteria developed to measure state efforts, and rank states based on the criteria. State rankings can be useful in many ways, but as with any comparison tool, it is important to understand how state rankings on any topic are arrived at (e.g., the breadth of activity measured and the methodology used). This chapter reviews Connecticut's rankings from selected studies, and provides insight into the ranking process. The discussion shows the criteria by which states are measured and how Connecticut compares to other states. The chapter then sets out key areas identified by the national literature as factors to consider for successful e-government initiatives, on a statewide basis, to occur.

How Does Connecticut Rank in Terms of Electronic Government?

Program review committee staff reviewed national literature and studies produced by a variety of organizations, including academic institutions, policy think tanks, government organizations, IT associations (private and public) and consultants. Two state ranking efforts are discussed first:

- Brookings Institution (*Ranked Connecticut 11 in 2008, and 19 in 2007);* and
- Rutgers University (*Ranked Connecticut 28 in 2008).*

These studies evaluate state websites based on common elements to varying degrees – usability, content, type of online services offered, privacy and security policies, and citizen participation.

Another state ranking is produced by the Center for Digital Government, a national research institute on informational technology policies and best practices in state and local governments. The process used by the Center to develop its rankings is different from the Brookings and Rutgers studies, and so is discussed separately, later in this chapter. In the 2009 committee study about economic competitiveness, that report was cited and it ranked Connecticut 37 out of 50 states on its use of digital technology.

Brookings Institution and E-Governance Institute at Rutgers University

Because e-government efforts can be broad and difficult to measure, two of the studies reviewed by PRI staff that ranked states on e-government, looked at specific aspects of state portals and agency websites. These studies evaluated state websites based on common elements to varying degrees – usability, content, type of online services offered, privacy and security policies, and citizen participation. PRI staff identified two separate studies – one from the

Brookings Institution[5] and the other from the E-Governance Institute located at Rutgers University, that periodically rank state government websites. Such rankings (done in cooperation with other entities) were last conducted in 2008.

Both organizations' study methodologies had independent reviewers evaluate state portals and a sample of individual agency websites based on a 100 point scale. Rankings and ratings were provided for each state.

Brookings Institution ranking. Former Brown University professor Darrell M. West, now Vice President and Director of Governance at the Brookings Institution, has been evaluating and ranking state agency websites since 2000, with the most recent ranking issued in a 2008 report. The report analyzed 1,537 state and federal websites to measure what is online, variation that exists across states, and compares the 2008 results to the previous nine years. A 0 to 100 point index ranked each state based on 18 features, based on a review of each state web portal and a sample of agency websites.[6] On average, 30 websites were reviewed in each state across all branches of government.

Table II-1 shows the highest-ranking state websites for 2008, with the 2007 ranking in parentheses. Two years ago, Georgia ranked 38th in the study and last year it ranked 13th. Connecticut was ranked 11th in 2008, up from 19 in 2007. Connecticut received a rate of 64.2 points out of 100 point scale, and the top state received 83.7 points. The lowest ranked state (Mississippi), received 31.1 points.

Table II-1. Top Ten State E-Government and Connecticut Rankings/Ratings From Brookings Institution 2008 Study (2007 rankings in parantheses)

State	*Ranking*	*Rating out of 100 Points*
Delaware	1 (1)	83.7
Georgia	2 (13)	78.3
Florida	3 (35)	77.9
California	4 (12)	70.9
Massachusetts	5 (6)	69.5
Maine	6 (3)	67.7
Kentucky	7 (4)	67.3
Alabama	8 (45)	66.4
Indiana	9 (16)	65.0
Tennessee	10 (5)	64.3
Connecticut	*11 (19)*	*64.2*

Source: Darrell M. West, Governance Studies at Brookings, *State and Federal Electronic Government in the United States, 2008.*

5 Prior to the 2008 study produced by Darrell M. West for the Brookings Institution, all previous studies were produced by him while he was a professor at Brown University.

6 Darrell M West, Vice President and Director, Governance Studies, Brookings Institution, State and Federal Electronic Government in the United States, 2008.

Interestingly, only about half of the states retained a top ten ranking from 2007 to 2008. For example, Delaware received a number 1 rank in 2006, fell to number 15 in 2007, and was number 1 again two years later. Utah and Texas, two states that are often ranked high by other organizations, did not make the Brookings Institution top ten, ranking 35 and 17 respectively, highlighting the effect of methodology.

Percent of time feature found on specific website reviewed. Table II-2 shows the 18 features that were used to rate state websites and the rating was partly based on whether the feature was present on the specific website being reviewed. The table shows the percent of time the reviewer found the feature present. A state earned a maximum of 72 points for a specific website. (The numbers of online executable services for each site earned up to 28 additional points - for complete survey methodology, see Appendix G).

Table II-2. Percent of Time Feature Found on a State Website

Feature	***CT***	***Highest States***	***Lowest State***
Online Publications	100%	38 states (100%)	MI (74%)
Databases	69%	12 states (100%)	MD (61%)
Audio Clips	54%	FL (94%)	NM (10%)
Video Clips	54%	FL (90%)	UT (15%)
Foreign Language Access	23%	DE (89%)	AK (3%)
Not Having Ads	n/a	n/a	n/a
Not having user fees	0	ME (83%)	20 states (0%)
Not having premium fees	n/a	n/a	n/a
W3C Disability access	4%	ME (63%)	3 states (0%)
Having privacy policies	96%	4 states (100%)	MS (19%)
Having security policies	96%	2 states (100%)	3 states (0%)
Allowing digital signatures	100%	7 states (100%)	MS (59%)
Option to pay via credit cards	n/a	n/a	n/a
Email contact information	100%	IL (48%)	14 states (100%)
Areas to post comments	88%	DE (93%)	MD (3%)
Option for email updates	88%	DE (89%)	WY (6%)
Allowing for personalization of website	8%	ME (83%)	NE (0%)
PDA or handheld device accessibility	0%	DE (71%)	33 states (0%)

n/a – information not available
Source: Darrell M. West, Governance Studies at Brookings, *State and Federal Electronic Government in the United States, 2008.*

A few of the key findings of the report were:

- website consistency in formatting and link placement is critical to easy navigation;
- state portals should link to all state agencies and services (to facilitate searching;
- busy and disorganized websites are bad - even with many helpful features - because information and links need to be intuitively located; and

- websites should not claim to offer online services when they only host PDFs of forms and documents that need to be printed, filled out, and mailed.

The report recommended states adopt the following best practices:

- websites have strong privacy and security policies so users feel safe, and all sites have a privacy policy;
- agencies have similar layouts mirroring the state portal page so users can easily identify the agency's website as state government;
- websites have pages that inform users when they are being redirected to an address outside state government;
- agencies have navigational guides and site maps that briefly summarize the information users will find on each webpage;
- the "What's New" section is up-to-date and conveniently located on each webpage;
- all websites have search engines;
- agencies should try to have personalized webpages for frequent visitors;
- foreign language accessibility is provided; and
- disability access is ensured.

Rutgers E-Governance Institute. Rutgers University created the E-Governance Institute in 2003 to assist policymakers, public sector professionals, and citizens in finding solutions to the challenges governments face in the information age. The institute's website notes that "the principles of e-governance are relatively straight forward:

- build services around citizens' choices;
- make government more accessible;
- facilitate social inclusion;
- provide information responsibly; and
- use government resources effectively and efficiently, saving taxpayers money."[7]

The E-Governance Institute independently conducted surveys of U.S. state e-governance efforts in 2003, 2005, and 2007, with the 2008 survey conducted jointly by the institute and the Department of Public Administration at San Francisco State University and co-sponsored by the American Society for Public Administration. The survey assessed state e-government by evaluating websites and ranking them on a national scale. Five individual categories with 18 to 20 measures each were used and given equal weight to arrive at an overall state rating. The categories were:

- privacy/security;
- usability;

7 http://andromeda.rutgers.edu/~egovinst/Website/

- content;
- type of online services offered; and
- citizen response and participation through websites established by state governments.

(See Appendix H for full methodology and measures used within each category.)

The top ten ranked states and their ratings are shown in Table II-3. The institute identified Maine as the best performer. Only three states (Indiana, Maine, and Massachusetts) that were ranked in the top ten by the Brookings Institute study were also in the Rutgers study's top ten. Connecticut received a much lower ranking in the Rutgers study (28) compared to the Brookings study, where Connecticut was ranked 11.

Table II-3. Top Ten E-Government States and Connecticut Ranking/Rating from the E-Governance Institute at Rutgers University (2008)

State	***Rank***	***Rating (rounded to tenth place)***
Maine	1	69.2
Oregon	2	66.5
Utah	3	63.2
South Carolina	4	63.1
Indiana	5	61.3
Missouri	6	60.4
New Hampshire	7	58.6
Massachusetts	8	57.0
Arkansas	9	56.0
Arizona	10	56.0
Connecticut	***28***	***48.5***

Source: Marc Holzer, Aroon Manoharan, Robert Shick, Genie Stowers, U.S. States E-Governance Report (2008), An Assessment of State Websites, E-Governance Institute (Rutgers School of Public Affairs and Administration).

Connecticut's rank by category. The Rutgers study also issued individual rankings for each of the five categories, in addition to the overall state ranking. As seen in Figure II-1, Connecticut ranked the highest in the citizen participation category (11), which included measures on whether the website accepted comments and contained newsletters, and a low rank (48) in availability of online services.

Comparison of Brookings and Rutgers state rankings for New England. Table II-4 compares the rank received for the New England states from each study. Only two states in New England were ranked in the top ten by each of the studies: Maine and Massachusetts.

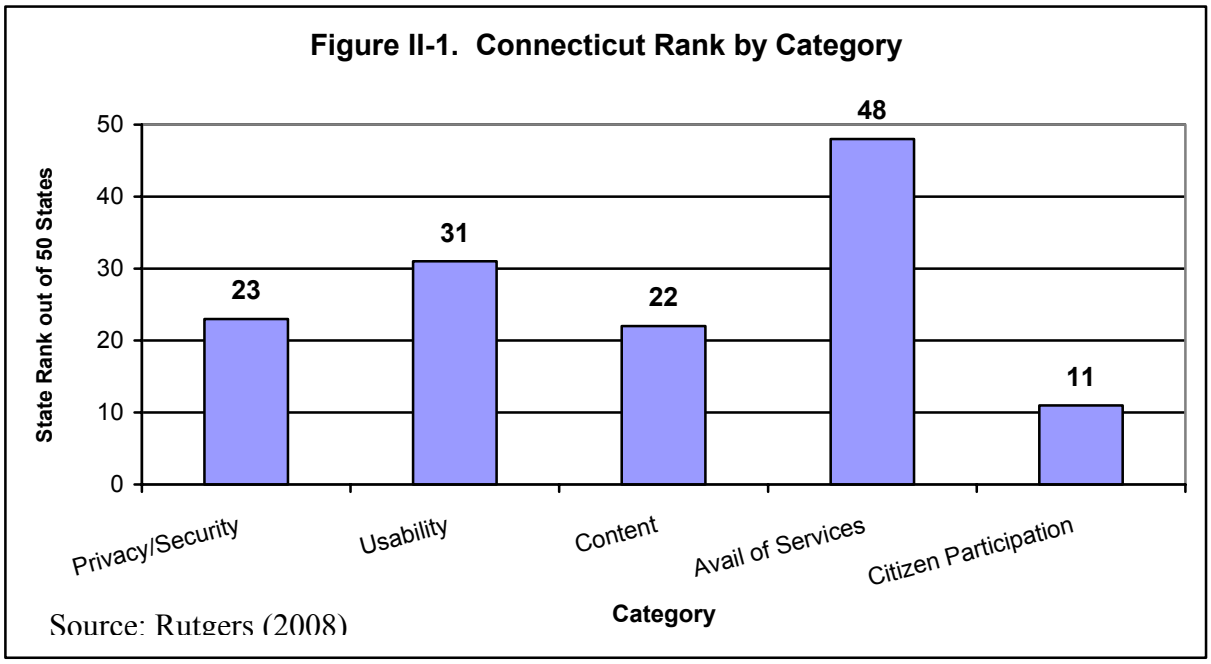


Table I1-4. New England State Rankings in 2008 by Two Organizations				
	Brookings Institute		***Rutgers E-Governance Institute***	
State	*Rank*	*Rating*	*Rank*	*Rating*
Connecticut	11	64.2	28	48.53
Maine	6	67.7	1	69.17
Massachusetts	5	69.5	8	56.99
New Hampshire	36	42.3	7	58.61
Rhode Island	25	48.3	18	53.74
Vermont	44	39.5	37	44.86
Source: E-Governance Institute (Rutgers School of Public Affairs and Administration 2008) and Darrell M. West, Governance Studies at Brookings, *State and Federal Electronic Government in the United States, 2008.*				

Ranking volatility. Overall, very few states consistently ranked among the top ten by the two organizations ranking them. Even within the same organization issuing the study, a state's rank can vary widely from survey to survey. Changes in the emphasis placed on e-government projects by state leaders, resources committed, or the priority placed on enhancing the kinds of information or types of transactions that are available from survey to survey, would have an impact on a state's rank.

In addition, another reason for the volatility is because of sampling methodology, which may have played a role in the variation in state rankings. Both studies based the state ranking on the state portal and reviewed only a sample of agency websites linked to the portal. If the sample of state agencies were different from the previous year (which is likely), or if the sample were different in the same year between the two studies (also likely), then sampling variation would explain the rankings variation.

The Center for Digital Government

As noted above, another organization that ranks states is The Center for Digital Government.[8] The center conducts a biennial survey of each state chief information officer (CIO) which consists of two parts: 1) of each state CIO and senior executives that is evaluated and scored; and 2) a CIO poll that is not scored, but credit is provided for its completion. In 2008, the Center ranked Connecticut 37 out of 50 states.

Based on the most recent survey results in 2010, the center has changed to assigning a letter grade to states. This comparison of states differs from the other two (Brookings and Rutgers) that were discussed above, since the center does not independently evaluate state websites, but bases its scoring on submitted survey responses completed by the states themselves. In addition, the letter grade given by the center is based on responses that encompass all aspects of a state's IT operations, and therefore the overall grade received by a state is not only for e-government projects. Based on the center's top ten state 2008 rankings, only two states from the Brookings Institute study were included (California and Kentucky) and two from Rutgers University (Utah and Arizona).

The most recent survey results were released in September 2010, for the 2010 biennial survey, and the letter grade assigned to each state is shown in Table II-5. In 2008, Connecticut ranked 37 out of the 50 states; the 2010 result is a B-, which if converted into a rank, would fall anywhere between 25 and 33 out of the 50 states.

Table II-5. State Letter Grade for IT Issued by Center for Digital Government

Grade	***States***
A	MI, UT
A-	PA, VA
B+	CA, CO, KY, MN, MO, NY, OR, SD, TN
B	AZ, AR, IL, KS, LA, MD, MA, MI, ND, TX, WV
B-	CT, DE, FL, GA, HI, NE, NM, OH, WA
C+	AK, IA, ME, MT, NV, NJ, NC, RI, VT, WI
C	AL, NH, OK, WY
C-	ID, IN, SC

Source: Center for Digital Governance, Digital State Survey – 2010 Results

The Center also gives out other types of awards, one of which recognizes states with the best state portals. The following states were announced as winners in September 2010: California, Arkansas, Alabama, Maine, and Kentucky. There were also six finalists: Michigan, Rhode Island, Tennessee, Texas, Vermont, and Virginia. Utah was number one in 2009.

8 Part of the center's operations includes an Industry Services component. This part of the company work closely with technology companies to help them develop successful plans and strategies for doing business in the state and local government market.

Factors Associated with Successful E-Government Initiatives

It is important to understand that many of the strategic decisions surrounding e-government need to be made before an actual website is created in terms of the information and services users want to access through a government website and how the website should be developed to best meet those needs. Several factors impact the success of a state's e-government project, with key ones described below.

Strong leadership. A 2007 report by the Congressional Research Service (CRS) examined the e-government policies and strategies of state government to provide effective practices and processes.[9] The report is based on research conducted by the Lyndon B. Johnson School of Public Affairs under contract to CRS. The report describes e-government as "the use of information technology to integrate government information and services for citizens, businesses, government, and other institutional uses." A key factor identified in the report for successful implementation of e-government initiatives is strong leadership, particularly gubernatorial, for broad acceptance and faster implementation of e-government programs. The report also notes that, a strong CIO, with the position having infrequent turnover aids implementation of e-government.

Strategic planning. Almost all of the literature reviewed by PRI staff confirms that strategic planning for e-government is crucial. Currently, states use a broad range of formal and informal strategic documents Successful states have developed statewide e-government strategies in order to ensure planning, coordination, and prioritization among individual agencies, given the limited financial resources available to state government in developing new e-government initiatives. Ideally, this occurs within a more comprehensive e-government strategy that maps the interconnectedness between agencies, identifies the major users of agency services, and provides for business solutions to better serve its customers.

Identifying customer need. One of the first steps in strategic planning for e-government is for state agencies to identify their customers and the activities they (i.e., citizens, businesses, and other government entities) want to conduct online. During this phase, recommendations by task forces and input from the business community, health professionals, individual citizens, state agency heads, and program managers should be incorporated into an overall strategic plan. The plan should recognize that cost is a factor and prioritize high volume/high transaction services in order to use resources most effectively.

The agency can then use that information to determine the types of information and services that should be made available based on a citizen/business-centric focus. According to the National Governor's Association for Best Practices, "the most effective state websites are those that focus on the needs and preferences of users and offer the same kinds of conveniences found on private sector websites."[10] The agency's business plan should specify the necessary resources, obstacles that must be overcome, and the IT solutions available.

9 *State E-Government Strategies: Identifying Best Practices and Applications*, Congressional Research Service, July 23, 2007.

10 National Governor's Association Center for Best Practices, Center Subissue, Information Technology, Jan. 13, 2010.

Design of state portal. According to the literature reviewed, the design of the state's master website, otherwise known as the state's web portal, is important because it often serves as the main entry into the various state agency websites. Some state portals have evolved from the early days of the internet and now, instead of just providing links to agency websites, allow for a variety of functions to be performed without an individual or business ever identifying the specific state agency that ultimately is responsible. A good state portal should have a well-designed search capability since that is how users often approach finding out about what they would like to do online. State portals are discussed later in this report to determine what key state web portal design features exist for states that are considered leaders in the e-government field.

Collection and review of performance measure data. Reviewing web traffic statistics regularly is one tool that allows agencies to know if a website is being used by stakeholders and, if not, to redesign it. Web traffic statistics that allow an agency to evaluate its e-government programs include the number of site hits, user contact sessions, number of downloads, amount of time spent on the site, information accessed most frequently, and number of times forms are completed and submitted online. In terms of cost measures, agencies can evaluate cost savings related to overhead and operating costs, such as paper use, postage, and transportation costs that are incurred through traditional modes of communication.

Commitment to funding. Since IT projects tend to be costly, funding is critical to project success. Given that e-government projects often compete for funding with other types of programs, many states have relied on a combination of financing, including revolving accounts, transaction fees, general operating funds, capital funds and federal funds. Although savings may be realized in the long run, cost savings will not emerge until enough users switch from traditional delivery systems to electronic delivery systems. Although government may allow a state to do more with the same amount of staff resources (e.g., customers experience less waiting time, whether they stand in line or conduct a transaction over the web), or allow for staff to be redeployed for new functions, cost savings can be difficult to capture, particularly when multi-channels for customer contact still must exist (i.e., front counter, mail, and fax).

Chapter III

Connecticut Web Presence and Best Practices

The use of information technology for the delivery of government services to citizens, transactions for business and industry, and access to government information shows itself primarily through websites as the gateways to the information and services. One of the goals of this study was to identify the current status of Connecticut state government's web presence, as a key indicator of the state's utilization of e-government. The identification of the current status of the state's web presence allows for comparison with best practices and model states. This chapter discusses website ease of use and content, describing and comparing both Connecticut's features and best practices.

Website User-Friendliness

User-friendly websites are those sites that help the user have a positive experience when visiting a state website. This includes ensuring that users can quickly locate the information they are seeking and feel confident any personal information revealed will remain private and secure. Many publications outline basic usability principals. Agreement has coalesced around a number of best practices to follow when designing and managing a government website.

One of the most concise statements of best government website practices comes from the federal government. In 2008, the Federal Web Managers Council published a report for the Presidential Transition Team entitled "Putting Citizens First: Transforming Online Government." Beyond detailing some of the issues facing federal websites, the paper states that users should be able to:

- "easily find relevant, accurate, and up-to-date information;
- understand information the first time they read it;
- complete common tasks efficiently;
- get the same answer whether they use the web, phone, email, live chat, read a brochure, or visit in-person;
- provide feedback and ideas and hear what the government will do with them; and
- access critical information if they have a disability or aren't proficient in English."

These goals provide the basis for developing a series of best practices, including treating web communications as a core agency function and requiring agencies to regularly review web content to ensure that the information is "accurate, relevant, mission-related, and written in plain language."

This chapter compares Connecticut's web presence, including the main portal, agency websites and availability of online services, to model states. It also examines Connecticut's use of web standards and policies. Based on these comparisons, recommendations are made to change Connecticut's web portal and modify the web template used by most state agencies.

Connecticut's Web Presence

The State of Connecticut's web presence mirrors the physical structure of state government. That is, Connecticut's current online presence is based not on one single website, but on the content and information available on over 65 individual agencies' websites. This decentralized approach requires the user to know or find out which agency or agencies have jurisdiction over the particular subject or program of interest. An example developed by the Connecticut Economic Resource Center (CERC) illustrates this point; a new limited liability company grocery store with employees would need to visit ten state agencies, a municipal authority, and four federal agencies to obtain all necessary approval prior to opening for business in the state. While making the ten state functions available online would be an improvement, the best practice goal should be to move to a single transaction that covers all 15 functions.

The current status of providing content and services across many relatively independent websites poses several challenges. First, users may not know what agency website has the information they are looking for. Second, content on individual sites may be organized differently, making it more difficult for users to understand the navigation system. Third, updating or upgrading many websites presents a greater challenge than making changes or upgrades to a single site.

Website features. Through an evaluation of individual agency websites, PRI staff found that most include basic usability features, such as links to the state's homepage (i.e., CT.gov) and the agency's homepage – both of which are part of the DOIT web template. However, other navigation features were less likely to be found. Only 26 percent of websites include a sitemap (i.e., a single page listing of the contents, hierarchy and navigation of the website) and less than five percent include a "help" link. The presence of both is a best practice as these are valuable in assisting users of the site. A useful feature for foreign language accessibility is the presence of either foreign language websites or a link to website translation tools.[11] Only 18 of 65 reviewed websites (28 percent) had content available in a foreign language or linked to translation services. Table III-1 shows some selected features used for the agency website evaluation.

All but two of the 65 examined sites (97 percent) clearly indicate when the homepage was last updated, typically through the presence of recent news and/or a copyright date. Approximately half of agency websites (54 percent) include relevant regulations. Video clips were present or linked to on 21 agency websites (32 percent) and were used for varying purposes (e.g., "how-to" videos, recordings of meetings, video blog). Most agency websites include "relevant links" (92 percent). Typically the links are to other Connecticut agencies (89 percent) or federal agencies (63 percent), though municipal links were less common (23 percent). A complete list of features examined, including a summary of agency use of features, is available in Appendix C.

11 Google offers a free website translation tool.

Table III-1. Selected Website Evaluation Results				
	Count (of 65)		*Percent*	
Criteria	*No/ Not available*	*Yes/ Feature available*	*No/ Not available*	*Yes/ Feature available*
Does the homepage clearly indicate when it was last updated?	2	63	3.1%	96.9%
Are regulations available online?	30	35	46.2%	53.8%
Are there video clips?	44	21	67.7%	32.3%
Are there relevant external links to:				
i. other CT state agency;	7	58	10.8%	89.2%
ii. federal agency;	24	41	36.9%	63.1%
iii. municipalities?	50	15	76.9%	23.1%
Source: PRI analysis				

Program review committee staff created indices of types of website features based on the presence of several individual criteria. Table III-2 shows the overall index performance and indicates what percentage of agency websites have at least half the features per index. Most agencies (36) had five of the eight possible usability features while only one agency had all eight features. Most agencies had all five contact information features, but one website had none.

Table III-2. Website Evaluation Indexes										
	# of possible items in index	*% sites with half or more items present*	*Number of websites with this amount of items present*							
Index			*0*	*1*	*2*	*3*	*4*	*5*	*6*	*7*	*8*
Usability	8	98.5%	0	0	0	1	4	36	17	6	1
Site Policies	3	89.2%	5	2	44	14	-	-	-	-	-
Contact Information	5	98.5%	1	0	0	2	21	41	-	-	-
Emerging Tech	6	10.8%	13	30	10	5	5	2	0	-	-
Source: PRI analysis											

Agency websites appear to generally provide static informational features. Usability functions, such as navigation and search functionality, help the user find information within the website. The listing of basic contact information (e.g., physical address, phone number, email address) helps users connect to the agency, especially regarding non-online services.

Emerging technology. The committee also examined the adoption of new or emerging technologies. Emerging technologies represent new ways to connect to users and respond to customer needs. There are many technologies that are established in the private sector and used extensively by other state governments, but are not a systematic part of the Connecticut web presence.

In Connecticut, few emerging technologies have been adopted, though it appears that agencies are looking for new ways to engage customers. According to the committee staff website evaluation, over two-thirds of agencies have taken advantage of the statewide system for signing up for automatic updates of agency websites via email. Also, over 40 percent of surveyed agencies indicated an interest in using RSS feeds to keep users up-to-date on agency news.[12]

When agencies offer only a website, users are expected to regularly check the agency website to discover what, if any, changes have been made. Email update lists, RSS feeds, and Twitter allow the user to affirmatively choose to receive regular updates. Those updates are then made part of other routine parts of computer use (e.g., checking email, looking at a twitter feed) rather than the standalone activity of visiting a particular agency site.

Mobile technology. Connecticut currently has little-to-no mobile presence online. None of the 65 executive agency websites mentioned the existence of a mobile application or had a mobile optimized website. Based on agency survey results, about one-quarter indicated an interest in developing mobile content. However, over half of agencies believe that porting agency website content to new mediums, such as mobile apps or a mobile optimized website, should be the responsibility of a statewide entity. Making mobile content available is important because research organizations project that accessing the internet over a mobile device, such as a smartphone, is growing and is expected to exceed computer use in five years.[13]

Social media. One of the marketing tools employed by several model states is the use of social media (Facebook, YouTube, Twitter, etc.). States use Facebook and Twitter to post news, announce new services, and provide information to users quickly. State agencies also use social media to provide specific information related to the services they provide. For example, in Rhode Island, the Department of Transportation maintains a Twitter feed of road closures and traffic information, as does Connecticut's Department of Transportation.

Because of the state's acceptable use policy, most social media sites have been inaccessible from executive branch computers.[14] While this prevents personal use of the sites, a blanket block from such sites also prevented agency employees from using social media for official uses. On November 1, 2010, the CIO established the executive branch's first Social Media Policy, which would allow certain uses of social media conditional upon DOIT approval. As the newly adopted social media policy is so recent and has a series of restrictions, it is unclear how social media will be used by agencies in the near future. Website policies, in general, will be discussed in greater detail later in this section.

Over half of surveyed agencies indicated they had interest in using social media, such as Twitter or Facebook, but, as shown in Table III-3, less than 15 percent were currently using

12 RSS feeds, or "Really Simple Syndication", are a way to see how a website has been updated without visiting the website itself.

13 Greg Sterling, "Pew: 85% of US Adults Have Mobile Phones, One in Ten (High Earners) Own Tablets," Internet2Go, entry posted October 14, 2010, http://internet2go.net/news/data-and-forecasts/pew-85-us-adults-have-mobile-phones-one-ten-high-earners-own-tablets (accessed December 1, 2010).

14 The state's acceptable use policy defines acceptable use of internet, e-mail and associated systems by executive branch employees.

either technology. This lack of use is likely due to the absence, until recently, of a state social media policy.

Table III-3. Agency Use of Social Media		
Feature	***% of agencies which have considered feature for use***	***% of agencies with feature***
Agency Facebook page	56.9%	13.8%
Agency Twitter account		10.8%
Source: PRI analysis		

The program review committee asked agencies what type of entity should be responsible for emerging technology policies. Less than half (46 percent) of agency survey respondents indicated that a statewide entity should determine proper use of emerging technology, 20 percent believed an interagency council should do this, and only 28 percent of agencies indicated that individual agencies should have primary responsibility.

Sophistication level of agency websites. As described in Chapter I, the sophistication level of websites can range from the static or passive presentation of information, to transactions and complicated interactions. Program review staff developed measures to determine the extent to which agency websites are operating at each sophistication level. Every agency will not necessarily have every feature examined; for instance, some constitutional offices do not have regulations to post – but the use of several of the features within a larger measure suggests that a particular sophistication level has been achieved.

The minimum level of online sophistication is the presence of static or passive information. Program review staff created an index of static information website features, which included the online availability of regulations, databases, calendar of events, and online publications, such as a newsletter. Staff found that over two-thirds of state websites have static or passive information available, which indicates that the state, overall, has a wide base of information available to the public.

The second level of sophistication is the availability of one-way interaction between the user and the agency. Through the evaluation of agency websites, committee staff found that 86 percent of websites included downloadable forms – meaning that users would be able to print a form, then mail or fax it to an agency, rather than having to call or physically visit the office. However, very few websites featured a way to directly obtain user input, such as a place to post comments or an online poll.

The highest levels of sophistication involve transactions (e.g., making payments, registering for services electronically) and more complicated interactions (e.g., searchable or customizable databases). Slightly under half of agency websites (45 percent) had these types of transactions available – including online services that will be discussed in greater detail later in this chapter.

State Web Portals

A state web portal generally has two major functions: 1) create an entry point for users, and 2) create and maintain a platform for the state's online content and services.[15] While the former is largely achieved through the establishment of a state web domain (e.g., CT.gov), the latter can be accomplished in a number of ways. Online content and services can be offered as part of a single state website, on individual agency websites, or any combination thereof. Besides content and services, the usability of portals (i.e., visual presentation and navigation) can vary greatly.

Best practices. Through staff review of model state websites and interviews with e-government personnel in these states, several common best practices were found:

- To be consistently useful, state web portals should often serve as the primary destination for users while interacting with government online, not as just the first stop.
- Websites should be focused on the user and activities, not on recreating the physical organization of government functions.
- A state web portal should reflect statewide e-government strategic planning and goals.
- A state web portal should be treated as an independent state program.

These common points among highly-ranked portals suggest that the centralization of online services and information is critical for successful web portals. In model states, the web portal has dedicated personnel that have multiple responsibilities, including: the design and usability of the website; aggregation and centralization of agency content onto the main portal; and operation of web content management systems that facilitate exchange and inoperability of data.

Connecticut's web portal. First launched in 2002, the CT.gov web portal was created as a way to market and organize state agency information online. The portal, which is maintained by DOIT, serves as the main website for the state as a whole and, more specifically, as the de facto executive branch homepage.

According to DOIT, the goals of Connecticut's web portal include:

- "Standardizing Web Site Quality across the State Enterprise
- Maximizing the Internet as a Tool for Agencies and the Public through a 'Service Without Boundaries' Approach
- Integrating State Information and Services
- Empowering and Enabling Agencies to Adopt and Use Portal Technology
- Preserving Autonomy of Branches and Agencies while Improving the Quality of the Portal on the Whole

15 Online content can include features such as event calendars, "about us" sections, online publications, FAQs, pictures, video, etc.

- Controlling and Regulating Site-Specific and Portal-wide Quality"[16]

Several of these goals speak to creating a balance between maintaining the state's web portal and enabling individual agencies. An examination of the CT.gov portal shows it is primarily used as an agency website directory service, which will assist users in finding the agency or agencies with responsibility or authority over relevant program areas.

Usability. As can be seen across the top of the following picture (Figure III-2), Connecticut's portal features several permanent links, including links to branches of government, "About CT" and a page with contact information for many state agencies. Additionally, the site has several links, seen on the left side of the page, based on types of activity, which are:

- working;
- living;
- learning;
- doing business;
- visiting; and
- government.

The activity links take the user to a listing of categories with additional links to a specific agency or program.

The body of the homepage includes a linked graphic that scrolls between a set of several featured events, programs, or services. Below the main graphic, the page includes a listing of the latest news and popular online services, the latter of which includes a link to a full listing of Connecticut's online services, organized by type of activity.

Sophistication level of CT.gov. While a crucial aspect of a transparent government web presence is access to information, a more sophisticated website will give users greater opportunity for online interaction and transactions. As described earlier in this chapter, an informational clearinghouse type of website can best be described as passive or static. The CT.gov portal fits the passive description because of the focus on directing users to the appropriate agency. In contrast, model states tend to offer high-level interaction on the main portal itself. This is done through value added services, such as aggregation of databases or "frequently asked questions" sections and providing additional user help functions.

16 DOIT: http://www.ct.gov/cpi/cwp/view.asp?a=938&Q=247520&cpiPNavCtr=|#31172

Figure III-2. Connecticut's Web Portal
Source: CT.gov, taken November 26, 2010

Model states. Beyond aggregating existing content and services, high-level web portals also include statewide or cross-agency functions that are unlikely to be present on an agency-centric web portal. The following are examples of statewide services on model states' websites:

- Massachusetts – includes a "Connect with us online" feature, which provides a table that indicates whether each agency uses Twitter, YouTube, or Flickr, or maintains a blog.
- Utah – maintains a list of available mobile apps, including the general "Utah.gov" app and several other, more specialized apps.
- Maine – includes a "DataShare" page, which has an index of common free datasets, links to agencies with data pages, and a search function specifically for data.
- Michigan – has a "Forms Finder" service that shows the most popular forms and has a form specific search.

Customization. Beyond making the basic homepage as accessible as possible, some model states also make user customization or personalization of the website available to customers. Customization can help ensure that the user has instant access to the portions of the site which that individual finds most helpful or useful. Several states include a user login that then either automatically shows information based on the users' expressed preferences (e.g., business owner working with building permits) or allows personal modification of the homepage to include commonly used features. Additionally, Utah.gov features a "local" section, as seen, in Figure III-3, which combines with geographic location data (either automatically provided or manually entered) to provide users with specific local information.

Comparing Connecticut to best practices. Connecticut's portal is minimally customer-centric, as indicated by the use of activity-type links (e.g., "doing business," "visiting"). However, the functionality of the portal is as a web directory, so *CT.gov and the larger state web presence continue to focus on the functions of individual agencies and branches instead of the state as a whole.* For instance, some model states have comprehensive visitor information that incorporates tourism information from multiple agency sources. The CT.gov website is adequate in its presentation of static data, but fails to include any of the higher level functionality that would enable the site to reach greater sophistication levels.

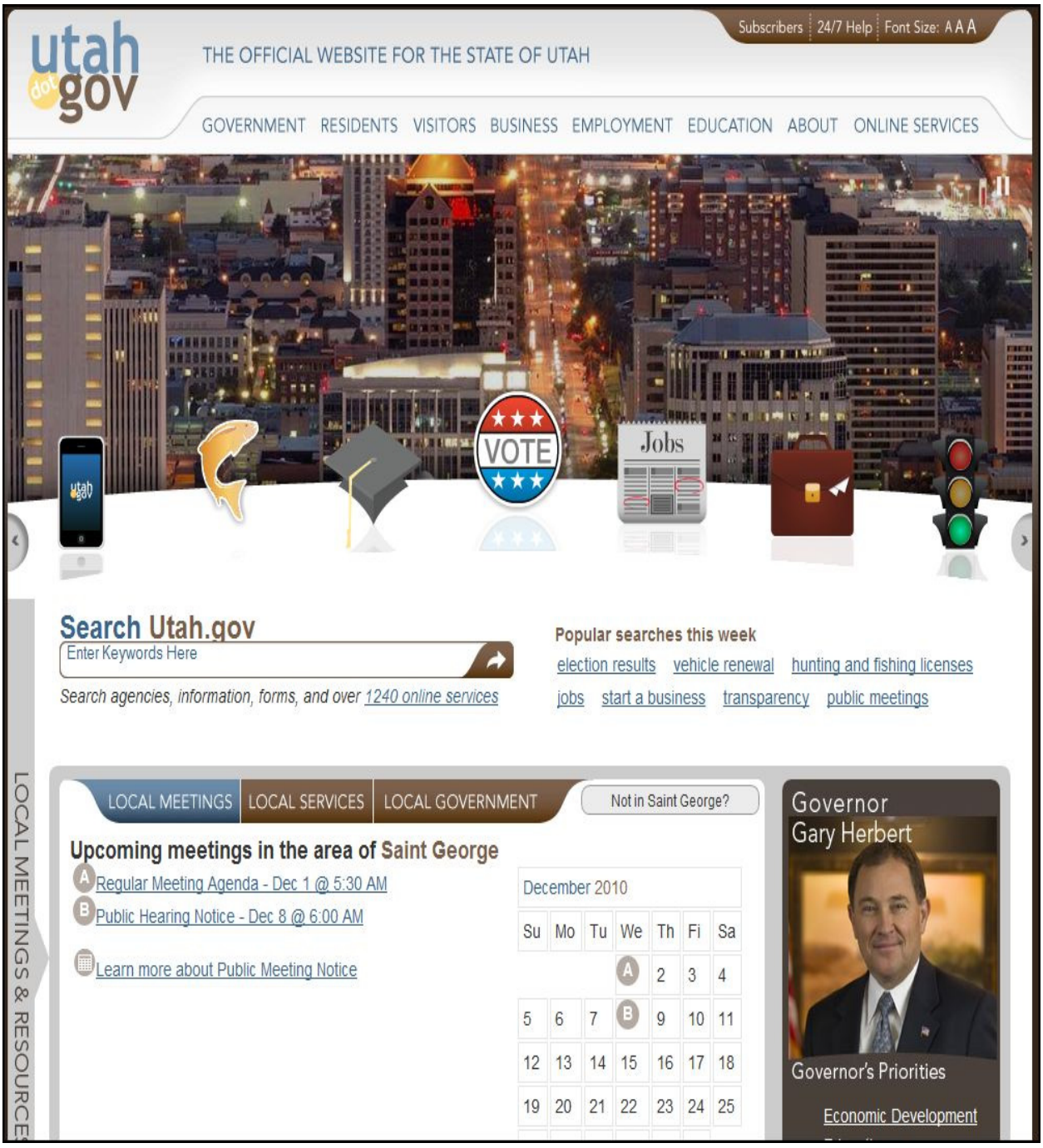
Online Services Overview and Model States

Online services are those functions that allow a client to conduct business with the state solely through use of the state's websites. When fully implemented, online services can expedite user transactions by eliminating the need for in-person, phone, or mail interactions. Additionally, online services can sometimes alter or eliminate certain agency functions. Model states have several key factors in common regarding online services, which include:

- provision of a wide range and large number of online services;
- statewide provision of common service types (e.g., a single application for submitting forms between state agencies);

- an exhaustive list of statewide service offerings clearly presented on the state web portal; and
- intuitive navigation of service listing, which may include search functionality and categorization by both audience (i.e., citizen, business, visitor, government) and service area (e.g., recreation, human services, taxes).

Figure III-3. Utah's Web Portal
Source: utah.gov, taken November 26, 2010



Implementation and availability of online services. The reported number of available online services in model states ranges from several hundred to over a thousand. States are able to increase service offerings at a relatively rapid pace through leveraging of interoperable systems. Rather than having multiple disparate databases and forms for registering businesses, Michigan has a dedicated "one-stop" registration for businesses that guides users through a series of interactive questions that eventually lead to the necessary electronic forms. Besides saving the user time by eliminating duplicative processes, the one stop registration also acts as a foundation for the provision of many related services, such as applying for environmental permits and tax registration. Connecticut has tried providing one stop registration services multiple times, but efforts have stalled out in part because the underlying services were not interoperable.

Additionally, model states often choose to use a single application for common business functions (i.e., use statewide enterprise services). For instance, a common responsibility for agencies is verification of a license, certification, or registration. Instead of each agency developing or purchasing software that performs this function, the state invests in a single application that is then customized based on specific agency needs. As described in Appendix F, the Department of Public Health was able to customize online licensing software originally used by the Department of Consumer Protection. Agencies that may not have otherwise dedicated the resources to obtain the necessary software may take advantage of the statewide system and increase online offerings.

Online service comparisons. Defining what constitutes an online service in order to compare the number offered among other states is problematic, as there are many informational transactions (e.g., step-by-step guides, downloading a park map) occurring on a regular basis with little measurable interaction between the agency and the user. Most model states include many purely informational transactions as part of their service listing – which is likely a contributing factor to reports of relatively high service availability. Also, states routinely include partial online services in a list or count of services (i.e., downloadable or printable forms that must be then be delivered in hardcopy to complete a transaction).

Further complicating counts is the possibility that one online service may be used in conjunction with or instead of multiple offline business functions (i.e., one online service may include many traditional agency services). For example, a single database may be used to both license a professional and for license status lookup for employees.

Presentation of online services. Highly-ranked states include a comprehensive list of available services as part of their main web portal. Further, these states often present services in innovative ways that allow intuitive navigation by users. As shown in Figure III-4, Maine.gov includes a list of commonly used services on its homepage along with a search function that is specific to services. The list of services is featured next to other customer-centric features, such as a frequently asked questions feature, a "How Do I" feature, and a listing of upcoming events.

Figure III-4. Maine's Web Portal
Source: Maine.gov, taken December 1, 2010

Besides an online services search function, Maine's service page includes indices of services alphabetically, by category (i.e., type of service), by agency, and by whether a service is free or fee-based. By including a variety of ways to access services, customers are more likely to be able to easily find and use specific online services.

Online Services in Connecticut. The main web portal lists 65 unique online services in 17 general areas, increased from approximately 40 services in 10 areas in 2006. The current areas of service listed on CT.gov are:

- Appointments to State Boards and Commissions
- Business Registration
- Consumer
- Education
- Elderly Services
- Employment
- Environmental
- Health and Well Being
- Legal
- Motor Vehicles and Transportation
- Online Occupational Licensing
- Outdoor/Recreational
- Public Safety
- Reference
- Register for Notification
- Send Feedback
- Taxes

Of note is that the services listed on CT.gov are overwhelmingly fully online transactions (e.g., file reports electronically, search a database). These services are listed in Appendix I. Because few partially online (e.g., downloadable forms) or informational services (e.g., meeting dates, newsletters) are listed, the number of services available is much lower than comparison states. Also, the CT.gov list of services may under-represent the full list of services, as it had several general listings that did not identify actual service functions (e.g., CT.gov listed insurance license renewal, but not the license verification or change of status functions).

As part of the evaluation of executive branch agency websites, program review staff created an inventory of web services. Approximately half of online services identified by staff through the agency website evaluation were listed on the CT.gov online services list, while the remaining services were either left off the CT.gov list or included as part of a larger service type listing. Program review staff identified at least one online service in several general categories, which can be seen in Table III-4.

Table III-4. Summary of Agency Online Services					
			Service Client Type		
Type of Service	*# of online services*	*# of online services with financial transactions*	*All*	*Citizens*	*Businesses*
Apply for a permit	1	1	0	0	1
Register for a list	10	3	3	3	4
Professional license or certification services	7	6	3	2	2
Apply for benefit or service	4	0	1	3	0
Submit a complaint	6	0	5	0	1
Request information (specific request form)	17	2	16	1	0
Request change of information or status	3	0	2	0	1
File reports (business filings)	5	2	2	0	3
File or pay taxes	2	2	1	0	1
Calculator (estimate benefit or cost)	2	0	0	0	2
Submit information or report violation	2	0	0	1	1
Other	3	1	3	0	0
Total	62	17	36	10	16
Source: PRI Analysis *Excludes services specifically for state employees/agencies and database searches					

The most common service types were information requests and registrations. While the number of information request services is high, those types of requests generally involve a non-electronic component (e.g., request to be mailed an informational packet). Approximately one-quarter of the online services found on agency websites involve financial transactions, so roughly three-quarters of online services are available free of charge. Most available services are designed for general use, though smaller amounts were specifically designed for either citizens or businesses.

Besides specific services, over 50 searchable or customizable databases were found across 26 (43 percent) of the 65 reviewed executive agency websites. Among others, these databases include license verification functions, mill rate lookup, and school district profiles.

Obstacles to implementation of online services. It appears that Connecticut has a number of online services that fall into several general categories, but a weakness is that there are few inter-agency services available. Further, there appear to be many instances where agencies with similar functions (e.g., filing secure reports, certification or licensing) are not using similar approaches to moving those functions online. In fact, there are several occasions where an agency has moved a particular business function online, while other agencies continue to perform this function completely offline. One example is electronic filing of consumer complaints. The Department of Insurance offers this service, while it is not available for individuals with complaints regarding health care professionals or home improvement contractors.

A notable impediment to the further development of online services is agency use of outdated systems for electronic functions. These legacy systems often hinder communication between agencies and occasionally prevent interoperability between divisions of an agency. Further, the data contained in the outdated systems may require significant modification or

cleaning in order to be part of a new, interoperable system. While the focus of this study has been on the provision of e-government services, these services will be significantly more difficult to implement without upgrading existing IT systems.

Several agencies have already begun a review and redesign of existing IT systems, which includes reevaluating the underlying business processes used by the agency. The reevaluations, such as the modernization project at the Department of Motor Vehicles described in Appendix F, are evidence that agencies are looking to improve efficiency through further leveraging of technology. However, because such efforts are initiated by individual agencies, it is possible that recently upgraded systems will continue to lack the interoperability necessary to communicate information easily on a statewide basis.

State Web Template, Standards and Policies

States issue web standards and policies to: ensure that state websites comply with any applicable laws and regulations; advise the agencies how to manage content; and ensure uniformity in website design between agencies. Templates also make websites more user-friendly since links and content are located in identical areas across web pages. Website visitors can more easily and quickly navigate from one website to another when a standard template is used, making their experience more satisfying and enjoyable.

Current Connecticut best practices. The Department of Information Technology sets statewide policies for several aspects of IT management. Working in collaboration with several other state agencies, DOIT adopted a series of best practices that went into effect in June 2010. "Web/E-Government" best practices were one of nine areas that were adopted by the group. There are 17 adopted best practices for "Web/E-Government," which vary in nature from outlining which items should be included within the website (e.g., inclusion of all applicable policies and use of DOIT's website design guidelines) to agency web content management. Several of the listed best practices include links to additional Connecticut policies, external policies developed by other levels of government or non-profit organizations, or guidelines for specific areas of e-government. These guidelines are not mandatory, but may be voluntarily adopted by individual agencies, many of which assisted in their creation. The list of "Web/E-government" best practices is provided in Appendix J.

Adoption of state template and policies for state agencies. Although most state agencies have migrated to the DOIT-promulgated template, many have opted out of certain features. In addition, 11 state agencies never moved to the CT.gov domain and remain on the "state.ct.us" domain name.[17] Personnel from DOIT report that several of the agencies using the old "state.ct.us" domain are in the process of migrating to CT.gov. One way to present a consistent web presence in a state where the provision of IT services is largely decentralized is to require that all state agencies use a common domain and template, so that users have a similar experience on whatever state website they visit. It can be confusing for the public when there is

17 Adoption of a single domain name, like CT.gov, makes "searching for government-related information and services more intuitive to citizens; increases collaboration among levels of government; and creates a trusted domain that hosts only officially recognized government websites." National Association of Chief Information Officers, *Harmony Helps: A Progress Report on State Government Internet Presence*, 2007, p. 3.

not a common "look and feel," or if information is located in one area on one website but absent from another.

State web template. The Department of Information Technology currently offers agencies use of a web template, in conjunction with a collection of underlying software known as a content management system, to maintain all the websites using the CT.gov domain. A standard template for state agencies was developed far back as 2002. Updates to the template have been somewhat frequent, with the last major update beginning in 2008. The use of all or parts of the template, however, has always been voluntary.

The web template is based upon a set of website design guidelines for the presence and placement of certain aspects and features of the agency website. For example, the guidelines define what permanent links should be included on every page of the website (e.g., "About Us," "Contact Us," and "Programs and Services"). Besides the placement of certain features on an agency homepage, the template also provides a basis for the internal pages of each agency site. In addition to facilitating common design and navigation elements across agency websites, the template can also be used to ensure that certain statewide standards and policies are followed.

Based on program review staff's evaluation, 80 percent of the 65 executive branch agency websites reviewed use the DOIT-created web template. The remaining 20 percent not using the template include the Higher Education System and Constitutional offices, which are statutorily exempt from DOIT requirements, and several other executive branch agencies.[18] The non-statutorily exempt executive branch agencies not using the template are shown in Table III-5, along with an indication of the agency's use of the CT.gov domain.

Table III-5. State Agencies Not Using State Web Template

Agency	***Uses CT.gov Domain***
Board of Education and Services for the Blind	Yes
The Connecticut Commission on Culture and Tourism	No
Connecticut State Library	No
Department of Administrative Services	No
Department of Labor	No
Department of Insurance	Yes
Freedom of Information Commission	No
Office of Workforce Competitiveness	No
Workers' Compensation Commission	No

Source: PRI analysis

State web policies. There are two primary types of IT policies in Connecticut: 1) those policies published for the benefit of web users (i.e., website policies); and 2) those policies established for government employees.

18 Four of the six constitutional offices use CT.gov despite statutory exemption. Three of the six offices use the DOIT-created template.

It is important for a website to publish up-to-date policies governing use of a particular website. Every state website should have a clearly marked set of site policies, which include a privacy policy, security policy, and accessibility/disability policy. Based on committee staff evaluation of Connecticut state agency websites, 92 percent of the 65 executive branch websites reviewed include a privacy policy, with 85 percent linking to the state's adopted privacy policy. However, only 22 percent of websites reviewed include a link to a website accessibility policy on the agency's homepage.

The state's privacy policy was last revised in 2002, but it should be periodically revisited to ensure it adequately protects user privacy. The link to the Connecticut's website accessibility policy states that a change was proposed in 2008, under the "What's New" section of the webpage. However, that was the last update, so it is unclear to users whether the proposed change was ever adopted. Given the ever-changing nature of emerging technology, it is important that such state policies be revisited on a regular basis to ensure that adoption of new technologies is not impeded by outdated policies.

Findings and Recommendations: Website, Portal, Online Services, Standards, and Policies

The State of Connecticut engages citizens and businesses online through CT.gov and a series of agency websites. Highly-ranked state websites tend to focus on the experience of users or clients and provide high-sophistication levels by enhancing user interactions. However, *Connecticut's web presence replicates the organizational structure of the state, and thus, is not particularly user friendly*. *Both CT.gov and agency websites in general fail to achieve consistently high levels of sophistication through the use of extensive, coordinated offerings of online services.*

Lack of statewide e-government priorities and actionable strategies, combined with the decentralized IT structure and the current emphasis on agency websites, impedes the state's ability to efficiently provide online service opportunities from a citizen and business prospective.

The web template should include features that will help ensure that users are able to find what they are looking for, be it information or interactive services. Best practices for usability suggest that online user help should be offered in a variety of ways, including static information, customizable information, and interactive help such as online live chat.

In order to make Connecticut's websites user friendly and customer-centric, the program review committee recommends:

DOIT should amend the state web template to include:

- **a site map;**
- **translation services for foreign language accessibility;**
- **general and program specific "frequently asked questions" pages; and**
- **user help features.**

The State of Connecticut's portal, CT.gov, trails leader states in availability of value-added, cross-agency and statewide services. In order to make CT.gov comparable to highly-ranked state web portals, the program review committee recommends:

The list of online services on CT.gov should be expanded through the inclusion of all agency transactions and selective inclusion of informational features, such as downloadable guides. In addition, the following features should be made available on the state's web portal, CT.gov:

- **downloadable databases; and**
- **downloadable forms.**

The services, databases, and forms features should be aggregated lists from agency online offerings and should be, at a minimum, searchable by keyword and indexed by customer, by function, by agency, and alphabetically. Where possible, presentation of new and existing features on the web portal should allow for user customization and/or personalization.

Agency adherence to state standards and policies is largely voluntary. To provide a common look and feel, as suggested by best practices, the program review committee recommends:

All executive branch state agencies, except those exempted by statute or the Department of Information Technology, shall use CT.gov for web hosting services and adopt the Department of Information Technology-created template for state websites.

Website policies are not subject to regular review and update. To ensure that state web policies are transparent to the user and up-to-date, the program review committee recommends:

The Department of Information Technology should establish a webpage of policies that includes the state's privacy, security, and accessibility policies as well as any other policies deemed necessary. A link to this policy page should be included as part of the website design template, in place of the separate links to the state privacy policy and website accessibility policy. All state agency websites should contain a link to the state policy page.

The Department of Information Technology, in collaboration with the E-Government Board, should review and revise the state's website policies not less than once a year. The review and adoption date of the latest version of the website policies should be clearly published with the policies along with a summary of any major changes.

The Department of Information Technology should review the social media policy annually and revise it if deemed necessary.

Chapter IV

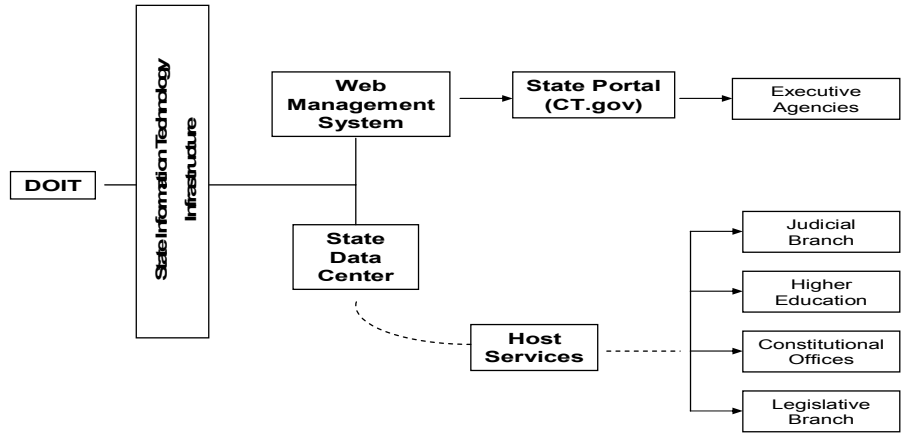
E-Government Development and Implementation Structure

The development and implementation of e-government initiatives involves several considerations including both a technical aspect (e.g., hardware, software, and other technological design and support) and a substantive government business aspect (e.g., business planning and assessing client needs). Each aspect is equally important and must work harmoniously to produce a successful e-government project. This chapter provides a general description of the basic e-government infrastructure in Connecticut, an overview of the major roles and responsibilities for e-government, and includes recommendations for long-term improvements for e-government.

Basic E-Government Infrastructure

The Department of Information Technology serves as the primary manager of Connecticut's information technology (IT) enterprise architecture.[19] DOIT manages the state's IT network, including the state data center, and provides a web content management system[20] to allow agencies to make government information available online to the public. DOIT also administers the state's main internet portal (CT.gov). (See Figure IV-1).

Figure IV-1. State Information Technology Basic Infrastructure for E-Government



Source: PRI

19 Enterprise architecture is a comprehensive blueprint used to manage and align the state's information technology assets, operations, and projects.

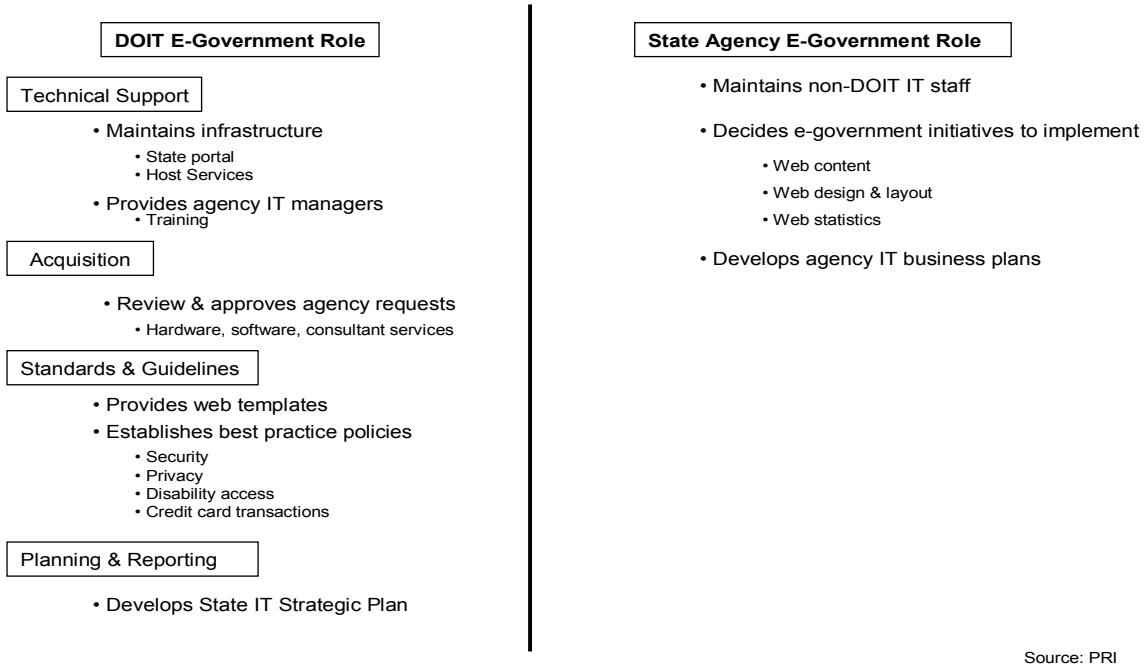
20 Web content management system is a software system that provides website authoring and administration tools designed to allow authorized users to create and manage a site's content. Most use a database to store content that might be needed by the system.

Under the current configuration, DOIT does not exercise full authority over the entire realm of IT in the state. The design and implementation of e-government is done in conjunction with – or sometimes, solely by – state agencies. The legislature, judiciary, the constitutional offices, and the entire higher education system are carved out and do not fall under DOIT authority. However, DOIT plays a critical role. It connects more than 100 agencies to the state network and provides host services to state entities across the different branches of government (i.e. executive, judicial, and legislative). Currently, DOIT hosts 118 IT applications for 80 state agencies in its data center, which provides a secure and reliable environment for the storage, processing, and movement of state data. In addition, state statutes explicitly state that DOIT must cooperate with the legislature, judicial department, and the constituent units of higher education in evaluating opportunities for saving money and sharing information that may result from their acquiring systems similar to those of other state agencies.

Major Roles and Responsibilities for E-Government

Connecticut law does not reference a single recognizable statutory authority for all e-government functions. As noted above, the responsibility for the technical aspect primarily belongs to DOIT. Responsibilities for substantive business decisions regarding e-government initiatives goes to the individual state entity. Both aspects are subject to statewide executive and legislative leadership. Figure IV-2 provides a basic outline of the primary roles and responsibilities for e-government projects.

Figure IV-2. Roles & Responsibilities for E-Government



Source: PRI

DOIT is statutorily responsible for a wide range of IT functions. Among these broad responsibilities is to identify and implement "optimal information and telecommunication systems" for state agencies as well as opportunities for reducing costs for such systems. Specifically, state law requires the chief information officer to:

- develop comprehensive standards, policies, and planning guidelines for information and telecommunication systems;
- review state agency acquisitions of hardware, software, and consultant contracts;
- oversee leasing, purchasing, and contracting for information and telecommunication system facilities, equipment, and services for most state agencies; and
- ensure statewide implementation of the 9-1-1 and E 9-1-1 systems.

The following discussion describes the various roles and responsibilities for e-government involving DOIT (both directly and indirectly) and the individual state agencies.

Technical support. As Figure IV-2 illustrates, one of DOIT's primary roles in e-government functions is to provide technical support and facilitate collaboration in cross-agency IT projects. Each state agency is serviced by a DOIT IT manager, either exclusively assigned to the agency or shared among multiple agencies. DOIT IT managers are the primary point of contact for all IT issues between DOIT and the state agencies. Among the managers' responsibilities are to:

- develop technology solutions to agency business problems;
- leverage solutions across agencies resulting in cost savings and standardization;
- ensure IT standards are consistently applied;
- implement enterprise IT practices; and
- manage consultant costs, and where applicable, the agency's IT resources (staff and hardware/software).

Although they are DOIT employees, the DOIT managers are located within their assigned state agencies to work in conjunction with other agency personnel on IT functions. According to DOIT, IT managers are located at agencies to better understand agency business issues, integrate business and IT strategies, and articulate the priority business needs of agencies to DOIT. As agency liaisons, the managers also participate in regular DOIT meetings to help frame technology issues, formulate DOIT responses, and communicate both to their assigned agency. The Business Development Division (BDD), within DOIT's central office, supervises the DOIT managers who direct the IT staff housed in the state agencies. BDD services range from dealing with day-to-day service needs and procurement processing, to identifying and helping to develop new applications to solve business problems.

While the technical aspect is handled by DOIT and/or other agency IT staff, all substantive business decisions for e-government initiatives remain with the individual agency. The individual agency determines what e-government initiatives it wants to pursue and the scope of such initiatives, as well as the web content, design and layout. However, funding and DOIT approval must still be obtained for large projects.

IT standards and guidelines. Among DOIT's major responsibilities is to develop and implement an integrated set of policies, standards, and architecture[21] for the information and telecommunication systems of executive branch state agencies. The CIO is mandated to review existing and new information systems and telecommunication technologies for consistency with both the strategic plan (discussed below) and approved agency systems design.

In 2002, DOIT established general website template guidelines as part of the creation of CT.gov. The template provides a level of uniformity among executive branch websites, with all giving contact information, office directions, site map, and feedback option.

Beyond DOIT's general template guidelines, each agency determines its own web content, design, and layout. The initial decisions of whether and how to utilize electronic technology to provide information and services through its website is made by the individual state agency. Agencies also determine website design and layout, which affect user navigation and accessibility. Interviews with staff of some of the state's largest agencies indicate that decisions regarding specific web content are primarily made by the various program level staff at each agency. Program review staff will continue to examine the delegation of e-government roles and responsibilities statewide and at the agency level in the next phase of this study.

In addition to the template guidelines, DOIT has recently updated specific e-government web principles and a series of best practices. These include minimum web browser requirements, guidelines for achieving universal accessibility, performing security assessment, and posting the state's privacy policy, as well as use of DOIT's payment service to process credit card transactions. These web principles and best practices are provided in Appendix J.

Acquisitions. As described in Chapter I, the level of website sophistication can range from simply posting static information to fully interactive two-way e-functions. For the most basic level, state agencies can often proceed without additional acquisition of technology or resources. More advanced levels of website sophistication may require additional technological design and support that may be available in-house at the agency, or be acquired through either purchasing commercial "off-the-shelf" products or more customized expertise by hiring a consultant.

DOIT is statutorily responsible for the procurement of information and telecommunication systems for the executive branch and constitutional offices.[22] State law specifically grants the CIO approval authority over the following acquisitions:

- agency hardware and software acquisitions worth *$20,000 or more*, within guidelines the CIO develops; and
- agency requests and proposed contracts for any information and telecommunication systems consulting services.

21Architecture is the defined structure or orderly arrangement of information systems and telecommunications systems, based on accepted industry standards and guidelines, for the purpose of maximizing the interconnection and efficiency of such systems and the ability of users to share information resources (C.G.S.§4d-1).
22 This study scope explicitly excludes an examination of hardware acquisition.

Accordingly, Table IV-1 shows state agencies are allowed to acquire hardware or software for an information or telecommunication system costing less than $20,000 without DOIT's approval. Hardware and software acquisitions over $20,000 but less than $100,000 are allowed if it is for a project that complies with the agency's business plan that has been approved by the CIO under the CIO's guidelines. DOIT has seven business days to approve or disapprove the state hardware and software acquisitions and agency requests for consultants. If the deadline is not met, the request is deemed approved.

Table IV-1. DOIT Acquisition Approval Authority.

Hardware/Software	*CIO Approval*	*Applies to*	*Timeframe*
<$20,000	No	All executive branch agencies and constitutional offices	CIO decision in 7 days or deemed approved
$20,000-$100,000	No, if part of CIO approved business plan for agency		
$100,000 +	Yes		
Consultant Services	Yes, unless for telecommunication consultant for DPUC or Consumer Counsel		

Source: C.G.S.§4d-2

System development methodology (SDM). One significant policy change DOIT has established for IT projects is the use of the system development methodology (SDM). DOIT first used SDM for the modernization project in the Department of Motor Vehicles (discussed further in Appendix F). Noting that IT expenditures were in excess of $100 million, Governor Rell issued Executive Order 19 in June 2008 requiring the use of SDM for all IT projects in the executive branch, with the exception of state higher education institutions.[23] The purpose of SDM is to institute uniform procedures that promote consistency in the planning and execution of IT projects, resulting in more efficient project timelines and costs. SDM is used in conjunction with existing policy and guidelines for acquisition and procurement.

Figure IV-3. Four SDM Variations

SDM-Standard: used for large or complex custom-development or infrastructure projects

SDM-COTS: used for projects pursuing the purchase of commercial-off-the-shelf (COTS) business applications

SDM-Lite: used for smaller, lower-risk application development or infrastructure projects

SDM-RAD: used for fast-paced, rapid application development projects using an iterative or "spiral" development model.

Source: DOIT

Currently, there are four SDM variations available depending on the project size and scale. As shown in the Figure IV-3, these are SDM Standard, Commercial-Off-The-Shelf (COTS), Lite, and Rapid Application Development (RAD).

Through the use of SDM, each IT project has a defined plan overseen by an identifiable project manager and clearly assigned roles for a range of project responsibilities. The process

23 SDM does not apply to the Judicial or Legislative branches of government.

requires active approval at each phase in order for a project to proceed, be re-directed, or stop based on a review of results and continued need. SDM requires documentation to record all decisions.

Depending on the scale of a project, the impact of SDM on e-government initiatives may be direct or indirect. The implementation of SDM yields several benefits. It allows DOIT to be aware of IT projects across agencies. The process fosters better coordination, eliminates redundant efforts, and helps leverage interagency and statewide investments. It assists in remediating risks and problems and holding vendors accountable. SDM also helps agencies avoid project scope creep. The case studies presented in Appendix F are examples of how SDM has affected the development of some recent e-government efforts. Appendix K provides further discussion on SDM and a copy of Executive Order No. 19.

Strategic plan. State law requires DOIT to prepare an implementation plan that incorporates policy goals and establishes strategies for state agencies' information and telecommunication system services. The CIO must develop and annually update this strategic plan with the statutory goals outlined in Table IV-2.

Table IV-2. Six Statutory Goals of the Information and Telecommunication System Strategic Plan.
1. Provide effective and efficient voice and data communication service among state agencies
2. Establish efficient collection, storage, management, and use of information
3. Develop comprehensive information policy emphasizing a commitment to sharing information resources, in relation to library and other resources, with a philosophy of equal access to information
4. Provide all necessary telecommunication services between state agencies and the public
5. Ensure emergency recovery capabilities necessary to support state agency functions
6. Provide access to higher technology for state agencies
Source: C.G.S.§4d-7

State law specifically requires DOIT's strategic plan to include planning for all state agencies with the goal of effective and efficient use and access to technology. The plan must contain:

a) an inventory of existing online public access arrangements for state agency databases which are subject to Freedom of Information Act (FOI);

b) a list of databases which could provide consumer, business, and health and human services program access;

c) provisions addressing the feasibility, cost, and potential for a public-private partnership in providing such access; and

d) email capability provided to citizens to communicate with state agencies.

Implementation of DOIT's Strategic Plans

Since the inception of DOIT, the department has prepared two strategic plans, each covering a four-year period – 2006-2009 and 2010-2013. Both strategic plans were prepared by the former CIO, Diane Wallace. At her 2005 confirmation hearing, Wallace's testimony focused on improving DOIT's customer service record by stressing a "value-added" approach to state IT services. Also of note, Wallace submitted the following comments on the importance of e-government:

> *I believe DOIT must promote e-Government. An important part of my vision for the Department of Information Technology is the development of more on-line services for the citizens of this state. The internet is a wonderful tool. Today, we use it to share information. But we should take advantage of the functionality it offers by performing actual business transactions on-line, making it easier to do business with the State of Connecticut.*[24]

First strategic plan. DOIT's first strategic plan (2006-2009) listed five primary strategies shown in Figure IV-4. Only Strategy 4 addresses e-government. However, it is important to acknowledge that all efforts to enhance the state's IT infrastructure and any related support resources to improve technology indirectly benefit and promote the state's e-government capabilities.

Figure IV-4. DOIT's Strategic Plan 2006-2009

Strategy 1

Build a high performance organization by investing in IT personnel & addressing organizational issues

Strategy 2

Strengthen & improve comprehensive disaster backup & recovery strategies & security programs

Strategy 3

Enhance & enforce a technology blueprint & standards

Strategy 4

Use technology to improve program effectiveness & resolve business issues, making services more accessible to residents and business

Strategy 5

Implement technology best practices

Source: DOIT Strategic Plan 2006-2009

24 Wallace, Diane. Confirmation Testimony. Executive and Legislative Nominations Committee. March 17, 2005.

2006 focus groups. In its annual reports, DOIT noted certain accomplishments toward the first strategic plan's fourth strategy. The most significant activity was hosting statewide focus groups on e-government and shared solutions with agency IT managers and business staff in November 2006. The purpose of the sessions was to advance Connecticut e-government strategy development, develop a common view of e-government opportunities, inventory the state's e-government initiatives, and assess potential for common solutions. Attendance at the focus groups included more than 50 IT and business managers, in addition to a range of professionals from 22 agencies, two constitutional offices, and higher education.

The first session covered the areas of healthcare, human services, and education. The second focus group involved general government administration and regulatory agencies. According to the focus group documentation, the CIO stated that the sessions were necessary for a better understanding of the existing gaps and barriers in order to provide the right infrastructure and network support to make the state of Connecticut's website a consumer-focused tool. The sessions were viewed as a first step for agencies to discover other agencies' efforts and identify the applications that are necessary and beneficial to constituents. As a result, the groups would be able to determine e-government commonalities, foster agency partnerships, and propose leveraging potential for applications.

DOIT prepared an e-government presentation for the groups and provided a list of the then existing state of Connecticut online services and e-government applications. Attendees were asked to review the list for any omissions to properly update the inventory. Participants were also invited to discuss and highlight major initiatives underway at the agencies. (A listing of the 2006 e-government inventory is provided in Appendix L.) In addition to the inventory, the sessions provided discussion on the availability of credit card payments online. DOIT noted that the payment technology is available and should not be a barrier or obstacle for e-government projects. The group acknowledged that online payment projects could have potential savings in back room operations and manual workforce processes. According to DOIT, the work of the focus groups resulted in a presentation to executive branch leadership offering a few proposals (e.g. creating a governor's taskforce on e-government). However, according to DOIT other state agency priorities including budget concerns eventually took precedence.

Other accomplishments. DOIT reported other accomplishments to achieving the e-government strategy in the first statewide strategic plan period:

- Sixty-eight state agencies and organizations and more than 100 sites were added to the CT.gov internet portal during FYs 2006-2008.
- The state's internet access capacity was significantly expanded for future use.
- A centralized credit card service was finalized for applications requiring online credit card payment.
- DOIT was involved in the development of systems for the Department of Motor Vehicles (an online registration renewal system described in Appendix F) and the Department of Environmental Protection (online bird mortality reporting).
- Remote access technology was improved to the state network, computers, and systems for numerous state employees.

Furthermore, in FY 2009 DOIT partially upgraded the web content management system with Web 2.0 capabilities to enable agencies to improve and expand online content.

Current strategic plan. The current strategic plan, for the 2010-2013 timeframe, outlines three primary strategies, presented in Figure IV-5. Of the three, Strategy 2 deals most directly with e-government efforts. Strategy 2 is identical to the strategy previously noted in the first strategic plan, except it adds the promotion of shared information across state agencies. In the first year of this strategic plan, the department has outlined a number of potential action steps to meet the updated strategies.

Figure IV-5. DOIT's Strategic Plan 2010-2013

Strategy 1

Maintain a secure, trusted & reliable technical environment that promotes efficiencies through an enforced enterprise architecture & standards

Strategy 2

Use technology to improve program effectiveness & resolve business issues, making services more accessible to residents & businesses, and promote shared information across state agencies

Strategy 3

Promote IT collaboration & partnerships that produce better IT solutions, while maintaining the culture for a high performance organization

Source: DOIT Strategic Plan 2010-2013

According to the DOIT plan, the potential action steps for Strategy 2 are to:

- Further identify e-government opportunities and promote cross-agency implementation plans to ensure a common look and feel for a more effective online presence;
- Find and support innovative technologies and services to assist agencies in the effective delivery of government services;
- Increase functionality of the state's Geospatial Information System (GIS) for use by state entities and municipalities;
- Leverage solutions across the Connecticut Education Network's constituents for added-value to the state's education environment;
- Prepare and support data and information sharing policies and practices; and

- Implement results-based accountability (RBA) principles to justify investments in technology solutions.

Best Practices: E-Government Structure

The successful development of e-government services involves a series of critical components, many which build and depend upon each other. According to the literature reviewed by the program review staff, these components include: 1) leadership; 2) buy-in from the executive branch agencies; and 3) a governance structure that communicates about, directs, and reviews all the activities necessary to implement the e-government goals for the state.

The following discusses and compares Connecticut's features with the best practices exemplified in selected leader states, related to the e-government governance structure, planning and collaboration, and project management.

Leadership. Leadership is frequently noted as the single most important ingredient for successful e-government initiatives. The literature on e-government best practices refers to leadership as the *will* of political leaders, management, and line staff to support e-government implementation as a strategy to provide government services electronically to the state's clients.[25]

According to the literature, leadership must involve a diverse group of high ranking officials including the governor, the chief information officer, department heads, and members of the legislature that collectively endorse and provide the resources to facilitate the transition to e-government. The group must also have a single approach driving the initiative.

Role of the CIO. The CIO plays a key role in ensuring that a state's web presence is technologically sound and that it provides meaningful assistance to the public. According to the best practices literature, the CIO is not merely a technical position; the CIO must also be a strategist for the state's information technology. As such, it is important for the CIO to develop strong relationships with many stakeholders inside and outside of state government. The CIO must address the various organizational dynamics in government that impede information sharing if the state is to make its e-government vision a reality.

Executive branch buy-in. Executive branch buy-in is considered another essential element of successful e-government. To be successful, there must be agreement as to what constitutes the scope of e-government and there must also be acceptance from the individual agencies. Commitment from the executive branch agencies involved in the implementation of the e-services must be ensured by leadership. States frequently mentioned as best-in-class for e-government - Utah, Maine, and Michigan – have enjoyed strong executive branch support for nearly a decade and through various administrations.

Establishing an e-government culture. The best practices literature also indicates sustained support from the governor and the legislature is essential to establish web-based

25 Congressional Research Service, State E-Government Strategies: Identifying Best Practices and Applications, July 2007, p. 11

technologies as a core cultural value. Agency culture can impede or support e-government development. Agencies are often adverse to changes because they can alter employee and agency functions. Ongoing communication with agency stakeholders is a necessary part of establishing and maintaining initial buy-in. It is critical to effectively communicate the benefits and expected results of collaboration and to demonstrate the positive outcomes that will result from the transition from one channel of service delivery (i.e., mail or in-person) to another (i.e., online).

E-Government leadership in Connecticut. Leadership initiation of and follow through for e-government services in Connecticut has been sporadic in recent years. As noted earlier, DOIT began a number of efforts regarding e-government services in 2006: focus groups; an inventory of web-related projects and online services; and suggesting e-government initiatives such as the creation of an e-government taskforce to the Governor's Office. However, those efforts all stalled for a variety of reasons, most notably the shift in attention to the state's budget concerns.

Initiatives for e-government projects such as the "one-stop" business portal have also experienced several starts and stops. Although a good foundation has been established through the partnership with the Connecticut Economic Resource Center's (CERC) website "CT-CLIC.com", interviews with various personnel indicate that individual agency resistance to collaborative participation is one of the barriers. More recently, a strong show of leadership can be seen in Executive Order 19, discussed earlier, which established the system development methodology (SDM) for IT projects to assist with keeping projects on time, on budget, and producing the desired outcome. DOIT presents the modernization project for the Department of Motor Vehicles as a SDM success story. Another project, the Criminal Justice Information System (CJIS) propelled by strong legislative support, has encountered some difficulties navigating the existing SDM. (Further discussion of SDM is provided later in this chapter.)

Connecticut's E-Governance Structure

Considering the potential breadth of e-government —the use of information technology to support government operations, engage citizens, and provide government services - its governance is challenging. Because it is a concept that covers all areas of state government and combines both technical and substantive spheres, it necessarily requires significant interagency coordination, cooperation, and collaboration, along with the capacity to assess, plan, and implement with a statewide view.

The governance structure defines who can make what decisions, who is accountable for which efforts, and how each of the players must work together to operate a website and web management process effectively.[26]

As described previously, Connecticut law does not reference a single recognizable statutory authority for all e-government functions. The responsibility for the technical aspect primarily belongs to DOIT. Responsibilities for substantive business decisions regarding e-government initiatives resides with the individual state entity. The governor appoints the head of

26 Federal Web Managers Council, http://www.usa.gov/webcontent/governance/definition.shtml (accessed December 1, 2010)

DOIT and all the executive branch agencies, with the advice and consent of the legislature. As with all major areas of state government, the legislature exerts control primarily through its budget authority. Further examination of the interaction between DOIT and the individual state agencies reveals a diffused approach that appears to impede optimum development of e-government.

Fragmented responsibilities. The program review committee staff survey to executive branch agencies provided additional insight into the governance structure regarding the development of e-government initiatives. More than half of the agencies (54 percent) responding to the survey reported that their agency personnel has full responsibility for planning and/or developing agency web projects, with the remaining respondents reported some mix of agency staff, DOIT personnel, and private consultants. Overall, more than sixty percent of the respondents (64 percent) described DOIT personnel as having little to no involvement in planning or development.

Similarly, more than half of the agency respondents (56 percent) reported that agency personnel had full responsibility for implementing and/or maintaining agency web projects while close to 70 percent said that DOIT personnel had little to no responsibility in this area. Approximately 30 percent of the agencies reported private consultants had much involvement with the planning and/or development of agency web projects but little involvement in the implementation and/or maintenance.

Throughout the interviews conducted by the program review committee staff, a common theme evolved: Many state agencies are protective of their jurisdictions and are unwilling to give up or share control of their programs or processes. As a result, there is resistant to dissolving their "silo" functionality. This is further exacerbated by the existing governance approach for decision-making of e-government initiatives that permits individual agencies to develop and implement their own objectives which does not allow for consideration of the needs or objectives of other agencies.

Connecticut's E-Governance Structure Compared to Leader States

States that are leaders in e-government show strong support at all levels of government. They exhibit steadfast leadership and solid working relationships between those responsible for decision-making and those responsible for implementation. The program review committee identified three aspects of e-government noted in leader states. These include whether the state has:

- a definition of e-government;
- dedicated resources to specific e-government functions; and
- an advisory IT council or web board.

Table IV-3 gives a quick overview of these governance components in leader states as well as in Connecticut. Further discussion on these areas is provided below.

Table IV-3. Comparison of E-Governance in Connecticut to Leader States					
Components of Governance Structure	**CT**	**MA**	**ME**	**MI**	**UT**
Has E-government Definition			X		X
Has Dedicated E-government Function		X	X	X	X
Has Advisory IT Council or Web Board	X	X	X	X	X
Source: PRI analysis					

Lack of consensus about scope of e-government. During the course of the study, committee staff learned there is no consensus among state agencies on what e-government means and what the scope of e-government covers. Two of the model states examined has adopted either a formal or informal definition, Maine (in statute) and Utah (in its strategic plan). (The definitions are provided in the profiles of other states in Appendix A.) Interviews with the leader states confirm that whether an e-government definition is formal or informal, it is important that all the stakeholders agree on the meaning of e-government. Without a consensus of what e-government covers, it is difficult to properly assign responsibilities and focus efforts.

Limited resources for e-government. Unlike other leader states and the federal government, Connecticut has minimal dedicated resources for e-government. Currently, there are four DOIT employees that make up the state portal group whose primary responsibilities are to maintain and support the underlying system for the state's portal, CT.gov. Interviews with various agency personnel suggest that managing the day-to-day agency IT operations consume much of the group's priorities. The group lacks the time and is not expected to pursue other projects and activities, such as planning for e-government services.

The commitment of resources and clearly defined responsibility for e-government is evident in top performing states. Maine has established a separate board made up of public and private members for the management of Maine.gov, known as InforME. The board has 20 staff dedicated to administration/customer support, marketing/project management, creative services, and development for the portal. This is done through a contract with a private network manager. A similar level of resources is found in Massachusetts which has an Office of Mass.gov within the state Information Technology Division. Its 15 full-time state employees are responsible for maintaining the state's portal, as well as being a service provider to agencies needing to establish online services on a common platform.

The state of Utah conducted a comprehensive baseline study and needs assessment of e-government in 2007. Utah now has an assigned director of e-government as well as a separate strategic plan specifically for e-government separate from the state's overall strategic plan for information technology. Similar to Maine, Utah contracts with a private vendor to maintain its portal, Utah.gov. According to Utah, the state provides direction by working together with agencies to identify needed online services and increase adoption rate of these services. This requires focus on advanced networking and web portal solutions, effective data management approaches, and security and information protection capabilities.

Although the state of Michigan does not have a separate unit for e-government, specific e-government functions are assigned throughout the Enterprise Division, part of the state's central IT agency.

Minimally active steering committee. Connecticut General Statute §4d-12(b) establishes an information and telecommunication systems executive steering committee responsible for reviewing and approving the annual statewide strategic IT plan. Chaired by the CIO, committee membership statutorily consists of representatives from the Office of Policy and Management, the Comptroller, the Treasurer, the Department of Administrative Services and each constituent unit of the state system of higher education. DOIT serves as staff to the committee. The committee is also responsible for submitting a report on approved variances to the list of approved architectural components for information and telecommunication systems for state agencies.

Although this steering committee was statutorily authorized in 1997, it was not convened by DOIT until July 2008, after two consecutive state auditors' reports identified this as a failure to adhere to statutory reporting requirements.[27] This delay also had an impact on the development of DOIT's statewide strategic information technology plan which is explained in further detail later. Since 2008, the steering committee has met five times.

The leader states examined by program review staff have advisory councils or web boards that have active involvement with their central IT agency. The boards and councils also have a diverse membership drawing from executive, legislative, and judicial entities as well as the private business sector and the public to provide input, as reflected by Table IV-4 on the next page.

27 State of Connecticut Auditors' Report Department of Information Technology For The Fiscal Years Ended June 30, 2004 and 2005 and State of Connecticut Auditors' Report Department of Information Technology For The Fiscal Years Ended June 30, 2006 and 2007.

Table IV-4. Web Advisory Boards/Councils in Leader States				
	Utah	**Maine**	**Massachusetts**	**Michigan**
Council/ Board Name	Technology Advisory Board	InforME Web Board	Portal Advisory Board	Michigan Information Technology Executive Council (MITEC)
Membership	7 members 5 gubernatorial appointments: 3 who are individuals actively involved in business planning for state agencies 1 who is actively involved in business planning for higher education or public education 1 who represents private sector business needs in the state but is not an information technology vendor for the state 1 representative from the legislature appointed by the House Speaker & Senate President 1 representative from the judicial branch appointed by the Judicial Council Members select the chair from among the group.	15 voting & 2 nonvoting members 6 gubernatorial appointments: 3 chief agency officials from the executive branch 1 representative from a statewide association of municipalities 1 from a nonprofit or user organization advancing citizens' right to access to information 1 from a statewide association of public librarians 5 legislative appointments of public members 1 judicial appointment 5 mandatory representatives: CIO, Secretary of the State, the State Librarian, the Commissioner of Administrative and Financial Services, and 1 representative from the private entity contracted as the InforME network manager. Governor appoints the chair from among the members.	14 members Director of Mass.gov (chair) 9 designated executive branch representatives from: Health & Human Services Public Safety Ethics Energy & Environmental Affairs Education Labor & Workforce Development Housing & Economic Development MassDOT Administration & Finance 4 representatives from: Attorney General Comptroller Treasurer MA Sheriffs Association	24 members CIO (chair) 19 members consisting of deputy directors, administrative officers or comparable level executives or administrators from each of the 19 client departments 3 representatives from the legislative branch 1 from the judicial branch
Meeting Schedule	As much as needed	Not less than quarterly	Bi-monthly or as needed	At least 6x year
Purpose/ Objective	Advisory	Advisory/voting authority	Advisory	Advisory
Reporting Requirement	Yes	Yes	As needed	Yes

Best Practices: E-Government Planning and Collaboration Process

E-government initiatives do not happen overnight and are not guaranteed to be successful. There are always challenges, barriers, and opponents working against changes to institutional conventions. As a result, the planning and collaboration processes are critical to the implementation of e-government programs. One of the most significant work products produced from these processes is a strategic plan.

Strategic plan. A strategic plan is an essential part of web management because it provides a vision, goals, and objectives for state agencies. According to the best practices literature, the plan must establish goals and objectives that clearly articulate how they will be implemented and by whom. The major goals should describe what the state wants to do and why. Specific objectives should describe how each goal will be achieved. As an end result, the plan should set priorities, guide what is to be done, and allocate available resources. The strategic plan should be concise and written for a broad audience. In the spirit of government transparency, the plan should be posted online so the public knows what the state hopes to achieve.

Planning process. The best practices literature indicates that the key for e-government planning is to take a long-term enterprise view of how the state can improve operations to fulfill customer needs. In other words, government must make satisfying customer needs the centerpiece of their planning – not just agency needs.

Customer-centric government means enhancing customer service, eliminating obsolete structures, and breaking down the silo thinking that has characterized the way governments have operated (e.g., departments working independently to meet their own goals instead of together to coordinate customer interfaces and services). These tasks are accomplished with detailed strategic planning with collaborative input from all the stakeholders. The planning strategies must include cross boundary collaboration with different levels and branches of government.

Cross agency collaboration. The literature on best practices refers to cross agency collaboration as a process in which two or more entities agree to cross organizational boundaries and combine resources in order to achieve joint goals.[28] Crossing organizational boundaries in order to achieve strategic goals is necessary in a customer-centric approach because citizens care about the services they receive, not about which government agency is responsible. As mentioned earlier, cross agency collaboration needs strong leadership to succeed. In addition, strategic planning for e-government must include all the relevant and appropriate organizations to avoid duplicating existing efforts and to ensure cross-agency websites are managed effectively.

Connecticut's E-Government Planning Process and Collaboration Efforts

As noted earlier, DOIT has prepared two strategic plans, each covering a four-year period – 2006-2009 and 2010-2013. By statute, the plan is intended to serve as a basis for the decisions that are made regarding the direction of information technology within the state.

28 National Association of State Chief Information Officers (NASCIO), *Getting Started in Cross-Boundary Collaboration: What State CIOs Need to Know*, 2007, p.1

Inadequate planning process. State law §4d-7(a) requires the CIO develop, publish and annually update an information and telecommunication systems strategic plan. The statute requires each state agency submit to the CIO any plans, documents and other information for the development of the plan (C.G.S.§4d7(c)). In addition, the statute authorizes the CIO to consult with representatives of business associations, consumer organizations, and non-profit human services providers. The executive steering committee, discussed earlier, is mandated to review and approve the strategic plan.

Inadequate agency IT plans. Each state agency must cooperate and assist the CIO in the strategic plan development, submitting information as the CIO requests (C.G.S.§ 4d-7(c)). The Department of Information Technology uses the statute to request the submission of an annual agency IT plan from every executive branch agency with technology staff. According to the DOIT strategic plan, the department uses agency IT plans to inform the development of the statewide strategic plan.[29] In 2007, DOIT provided agencies a template for the submission of their IT plans (see Appendix M).

The committee conducted an examination of the agency IT plans filed at DOIT. The plans were reviewed initially for format and content. However, the examination revealed other issues. As Table IV-5 shows, a number of the plans were either in the last year of their planning period, outdated, covered long planning periods, or did not conform to the DOIT template. More than half (57 percent) of IT plans reviewed were submitted in 2008, thirteen plans were submitted this year, two were filed in 2009, and five were prepared in 2007. Three plans were completely outdated while 16 plans covered time periods of three or more years. The size of the agency IT plans ranged between 3 and 39 pages in length. Despite the fact that DOIT has established a standard template for agency IT plans, many agencies did not completely follow the format and 12 did not use the template at all.

Table IV-5. Analysis of Agency IT Plans Submitted to DOIT

Recent Agency IT Plans (N=48)	**Agencies**
Year Submitted:*	
2010	13 (28%)
2009	2 (4%)
2008	26 (57%)
2007	5 (11%)
Number of plans with reporting period:*	
– **ended before FY 11 (Outdated)**	3
– **ends in FY 11 (Last year)**	26
– **ends after FY 11 (Active)**	13
Number of Planning Years Covered:*	
2	29
3	13
4	2
7	1
Range of Plan Length	3 to 39 pages
Followed DOIT Template:	
No	12
Yes	11
Partially	25

Source: PRI analysis
* Information was not available on all plans

Upon closer examination, several of the agency IT plans, regardless of whether or not they followed the template format, provided content that was broad and vague. The IT plans of a handful of larger agencies were very detailed and provided a wealth of information. However,

29 State of Connecticut Department of Information Technology Strategic Plan (FY 2010-2013), p.6 and 28.

there were also a few larger agencies whose plan submissions appeared cursory. Compliance with the plan template was most consistent among the smaller state agencies that share the same couple of DOIT IT managers.

Based on the condition of these IT plans, it is unclear how the individual plans are used by DOIT to inform the development of the strategic plan, if at all. It is also unclear how helpful the plans could be, even if used, given the information in some instances is outdated, vague, and inconsistent. DOIT has acknowledged that some agency IT plans are not current and has indicated to agencies the need to update annual IT plans. Despite having IT managers co-located at the state agencies, the general DOIT response appears to be that managers are too busy dealing with day-to-day operations to make planning a priority item.

Limited involvement of the executive steering committee. As mentioned previously, the executive steering committee is statutorily required to review and approve the statewide strategic plan. Although DOIT has prepared two strategic plans, the executive steering committee was not convened until July 2008, as noted by the state Auditors of Public Accounts. As a result of the non-existence of the executive steering committee, the auditors found that DOIT did not formally publish or annually update its strategic plan during two audited periods (FYs 2004-05 and FY 2006-07). The auditors stated that a lack of administrative oversight appeared to contribute to the situation. In 2006, DOIT's formal response published in the first auditors' report stated in part:

> "Due to limited resources and the time to develop the State Strategic IT Plan, DOIT has not made the steering committee a priority. After the State Strategic IT Plan is completed, DOIT will plan to move forward on this effort."[30]

However, the next audited period (FY 06-07) again revealed that the steering committee was still not active. The auditors stated in the second report that:

> "The absence of this information may prevent the General Assembly from reaching critical decisions regarding the Department and contribute to a lack of focus regarding the Department's mission."[31]

DOIT's response to the auditors' findings was that although the steering committee was not convened, the state's first strategic plan for 2006-2009 was formally presented to the Office of the Governor, agency commissioners, and other key stakeholders. DOIT's second strategic plan, for 2010-2013, was approved by the executive steering committee in February 2010.

Weak strategic plan. As noted earlier, the current strategic plan (2010-2013) outlines some broad future considerations but does not provide specific objectives to achieve the goal. The plan states that objectives are set in the annual agency plans (discussed above), as well as in the department's products and services manual and operating procedures. The plan also lists the names of key technology initiatives by individual agencies. However, the plan explains that the details on the projects are presented in DOIT's Quarterly Technology Reports to the Governor

30 State of Connecticut Auditors' Report Department of Information Technology For The Fiscal Years Ended June 30, 2004 and 2005, p.10

31 State of Connecticut Auditors' Report Department of Information Technology For The Fiscal Years Ended June 30, 2006 and 2007, p. 12

that are not readily available to the public. (The department states that a report containing similar information to the Quarterly Report will be published online in February 2011.)

The current strategic plan does report on the achievements of the last reporting period. Other items presented in the plan include a graphic display of the phases of SDM and some Connecticut statistics produced by the private sector research group Gartner. Interestingly, when the program review committee staff requested the supporting documentation for some of the Connecticut-specific IT statistics quoted in the plan, DOIT responded that they did not possess the Gartner information nor could they replicate it.

Contrary to best practices, Connecticut's strategic plan is overly broad, provides limited guidance, and portions are not wholly accessible to the public. The current strategic plan (2010-2013) serves more as an informational annual report than a strategic document.

Limited cross collaboration. The limited extent of cross collaboration for e-government was revealed by the program review committee staff survey. One question asked state agencies whether they partner on any interagency web functions, such as a shared database of professional licenses. Sixty-three percent stated they did not, while the remainder said they did. The survey also inquired about the extent of web interaction with municipalities. More than sixty percent reported they had no municipal interaction while the rest indicated they had links to municipal websites (23 percent), provided list of municipal contacts (18 percent), allowed municipalities to download agency databases (16 percent), or shared a common database (5 percent).

The program review committee staff examination of agency websites also provided insight to cross collaboration. A majority of the agency websites included external links to the federal government (63 percent) or relevant non-government (79 percent) entity websites, however, only a small number (23 percent) had links to municipal government.

E-Government Planning Process and Collaboration Efforts in Leader States

A comparison of Connecticut's strategic planning and collaboration efforts to other states considered leaders in e-government reveals a number of differences. As seen in Table IV-6, top-rated states draw from various sources in developing and designing strategies with stakeholders to accomplish e-government goals.

Strategic plans. Both Maine and Utah prepare a separate strategic plan for e-government in addition to its statewide plan for information technology. In addition, Utah statutorily sets out the requirements of the individual agency IT plans that must be submitted annually. The leader states examined by the program review committee staff also include specific goals and objectives in their strategic plans. For example, Utah sets annual goals that challenge the state government to expand the number of government online services by a specific percent or increase the percentage of financial transactions that are conducted online.

Table IV-6. Comparison of IT Strategic Plans in Selected States.					
Strategic Plans	**CT**	**UT**	**MI**	**ME**	**MA**
Recent Period	2010-13	2010-13	2010-14	2010-12	2009-2011
Separate Plan for E-Government	-	Yes	-	Yes	-
Prepared By	CIO	CIO	CIO	InforME	CIO
Input From	Agency plans	Advisory board & CIO cabinet	Various*	Web board, private network manager, IT agency staff	Advisory board & CIO cabinet
Approved By	Steering committee	Board	Tacit approval by involvement	Web board	Tacit approval by involvement
*Described below Source: PRI analysis					

Planning process. An examination of Michigan's strategic planning process shows use of a number of tools such as surveys, priority setting exercises, and interviews in the evaluation of current and past performance and in setting direction for a new strategic plan. A brief description of how these tools are used is provided in Table IV-7 and discussed further in Appendix A.

Table IV-7. Tools Used by Michigan for IT Strategic Planning Process		
Tool	**Sample Questions Asked**	**To Whom**
Web-based Survey	– How has IT helped or fallen short in meeting your business demands? – What do you see as your biggest challenges today and in the future? – How do you see technology serving your business in the future? – What technologies do you wish you were using?	MITEC advisory council*
Strength, Weaknesses, Opportunities, and Threats (SWOT) Analysis	– What is working and what is not? – What should we be doing? – What should we stop doing?	MITEC, IT leadership & staff
Interviews	– How do you see your line of business changing (demand, service types, mandates)? – In which areas do you expect your biggest challenges? – Are you investigating new technology opportunities that will help you meet future business demands?	Individual Agency Officials
* MITEC advisory council includes all 19 executive branch agencies. Source: Michigan ICT Strategic Plan 2010-2014 (Appendix A: Planning Process)		

Collaboration efforts. Michigan and Utah also provide examples of enhanced collaboration efforts. Utah law requires the CIO to prepare an inter-branch information technology coordination plan that provides for the coordination, where possible, of the development, acquisition, and maintenance of information technology and information systems of the executive branch, judicial branch, the legislative branch, the board of regents, and the state board of education. The plan is considered an advisory document.

Michigan created the Office of Technology Partnership (OTP) within its central state IT agency to foster technology collaboration and improve the way government functions across boundaries. Michigan's cross collaboration program began with a committee comprised of local and state government IT directors and associations. It now also encourages partnerships with businesses, schools, universities, and non-profit organizations. Its purpose is to leverage existing infrastructure, applications, processes and resources to eliminate duplication of effort and reduce costs. The group works to develop strategies and policies across tiers; identify unique opportunities/barriers and incentives; discover potential shared business processes; and find ways to allocate resources and share costs.

FINDINGS AND RECOMMENDATIONS

Perhaps the single most important element of successful management for e-government is the demonstrated commitment of top leaders. Strong leadership with an evident priority for advancing e-government can provide for broader acceptance, support, and faster growth of e-government programs. States that consistently rank high for e-government all benefit from strong leadership from their top executive.

Top leadership involvement and clear lines of accountability are critical to overcoming organizations natural resistance to change. Leaders must identify, articulate, and advocate the benefits of e-government and its objectives. *The successful execution of e-government objectives requires strong leadership that promotes the value of e-government and works to increase buy-in among stakeholders. Leadership must cultivate an ongoing e-government culture within state government.*

Acceptance of a common e-government objective can only happen when leaders agree on the purpose and potential for e-services to achieve business outcomes. Leadership must make certain that employees involved in the implementation of initiatives understand the move toward e-government, its importance, and what their roles and expectations will be. Through periodic meeting with organization heads and staff, the CIO can help instill a sense of common goals and trust within and between the organizations involved in the effort.

E-Governance Structure

Connecticut's governance structure for planning, developing, and implementing e-government services is inadequate. Primary decision-making responsibilities are fragmented across agencies without focus or direction. Statewide e-government initiatives in Connecticut appear to somewhat lag behind leader states. E-government service development has been slow. Some Connecticut projects suffer from lack of momentum, such as the one-stop business approach. There is limited coordination and collaboration among state agencies.

The leader states of Maine, Massachusetts, Michigan, and Utah all have active councils and web boards that include agency representation that regularly provide advice, give input, and build collaboration among their diverse membership. To follow leader states, Connecticut's e-governance structure must include individuals in defined advisory positions that are involved in strengthening the state's portal, developing and supporting technology, marketing the products and services, and – most of all – defining and achieving the state's e-government vision and goals. Therefore, the program review committee recommends that **Connecticut establish a governance structure to facilitate the development, implementation, and evolution of e-government.** To accomplish this, **an e-government board shall be established, with 19 members consisting of mandatory representatives from the executive branch and constitutional offices, and appointments made by the governor, legislature, and judicial department.**

Specifically, the board membership shall consist of:

- **Four mandatory board members: the DOIT CIO; the Secretary of the Office of Policy and Management, or designee; the Secretary of the State, or designee; and the State Librarian, or designee.**

- **The governor shall appoint one executive state agency representative from each of the following eight state service areas:**
  - **Human Services;**
  - **Health;**
  - **Transportation;**
  - **Regulation and Protection;**
  - **General Government Administration;**
  - **Conservation and Development;**
  - **Education; and**
  - **Judicial.**

- **The legislature shall have six appointments:**
  - **The Speaker of the House, the House majority leader, and the House minority leader shall appoint a municipal representative, one representative from the business sector who is not an information technology vendor for the state, and one member of the public, respectively.**
  - **The Senate Pro Tempore, the Senate majority leader, and the Senate minority leader shall appoint a municipal representative, one representative from the business sector who is not an information technology vendor for the state, and one member of the public, respectively.**

- **The Chief Court Administrator shall appoint one representative from the judicial department.**

The Governor shall appoint the chair of the board. The chair, in consultation with the members, shall establish the board's by-laws. The legislative and judicial appointments shall be non-voting board members. The term for appointed members is three years. The board shall meet no less than on a quarterly basis. Vacancies shall be filled in the same manner as the original appointments. A majority of the board shall constitute a quorum.

The board may form subcommittees on specific topics as necessary for either ongoing, major activities (standing subcommittees) or short-term activities (ad hoc subcommittees) that cease when the activities are completed. The board chair shall task the specific mission, charge, or set of issues to be addressed by the subcommittee(s).

The board shall provide advice on the development of Connecticut's e-government visions and goals, and provide input for strategic direction and priorities. The board shall annually report its recommended strategic proposals and priorities for e-government to the CIO for inclusion in the strategic plan.

The board should serve as an interagency forum for improving agency practices related to the design, acquisition, development, use, and sharing of e-government services. This will allow agencies to share experiences and discover what initiatives are underway or being considered across the state to present potential opportunities for cross collaboration. The board will provide overall leadership and direction to the executive branch on electronic government. It will facilitate ongoing dialogue among government leaders on electronic government in the executive, legislative, and judicial branches - as well as representatives of the private and nonprofit sectors - to encourage collaboration, best practices, and innovative approaches.

Among the board's responsibilities are to identify business and customer service needs and develop recommended strategies and actions to the CIO for guiding e-government initiatives. Specific board responsibilities shall include to:

- **develop and adopt an e-government definition;**
- **provide input to DOIT on the use of CT.gov as the centralized source for state government information and services;**
- **generate priorities for new online services;**
- **recommend common functions among state agencies that could be shared;**
- **consider whether to propose convenience fees for any online services;**
- **assist in the selection and development of web traffic statistics to be compiled; and**
- **develop and adopt an annual strategic plan for e-government.**

DOIT shall provide staff resources for the board.

Within the governance structure, there must be a group of individuals designated to develop and recommend e-government policies, create procedures to implement the policies, determine and operate web management controls, and develop and use performance measures. As the lead agency for state information technology, DOIT should maintain this role. The

program review committee agrees that DOIT's role should be primarily to provide technical support; however, it is necessary for there to be a centralized authority to help guide statewide IT development and assist in the implementation of State's e-government identified priorities. As such, the program review committee recommends that **e-government should be a recognized, dedicated function within DOIT. At a minimum, the responsibilities of statewide e-government services and functions should be assigned to a director. The e-government director must:**

- **support the expansion of the delivery of state online services through the state's main web portal;**
- **advise the CIO on the resources required to develop and effectively administer electronic initiatives;**
- **recommend necessary changes related to strategies and priorities for e-government;**
- **promote innovative uses of information technology by agencies, particularly initiatives involving multiagency collaboration;**
- **coordinate with local and federal government when appropriate for collaborative online efforts;**
- **assist in establishment of policies and standards for e-government services;**
- **examine common performance measures and web trends to determine effectiveness;**
- **participate in DOIT's system development methodology process to become aware of ongoing and proposed e-government projects; and**
- **periodically examine other states who are noted as leader states for e-government to determine if Connecticut needs to revise its strategies.**

The director shall prepare an annual report of e-government projects and services, including a complete list of services offered through the state's main portal. The report should also include potential new online services and summarize results of performance measures and web statistics compiled for e-government. The results shall be provided to the e-government board.

The program review committee believes that augmenting the existing governance structure with a more diverse advisory/coordinating body for e-government will allow for more input and collaboration from the stakeholders. Together with the implementation of the other proposals, DOIT's role of supporting and enabling IT in service and business processes will evolve to a driving role of providing leadership and serving as a catalyst in business process and organizational change.

Planning Process

Connecticut needs to prepare an e-government roadmap showing where it is going and how it will get there through its strategic plan. Contrary to the best practices literature, *Connecticut's strategic plan is broad, provides limited guidance, and is not transparent for*

public consumption. The plan appears to serve more as an informational annual report than a strategic document, likely due to an inadequate planning process. The program review committee finds that *the existing planning process is weakened by inadequate agency IT plans, limited involvement by the executive steering committee, and minimal cross collaboration efforts.*

Therefore, the program review committee recommends that **there should be a strategic plan specific to e-government in addition to the statewide strategic plan for information technology. The CIO should prepare the e-government strategic plan in consultation with the new e-government director and board.**

The state's overall e-government strategic plan should include a clear strategy for providing online services for different user groups according to their needs (e.g., citizens, business, visitor, government, etc). To do this, the CIO should obtain input from stakeholders in a variety of methods, in addition to the individual agency documents. Drawing from the planning process in leader states, the program review committee recommends that **Connecticut's strategic plan should be developed in partnership with state agencies and other relevant stakeholders through the newly formed web board. Activities to inform and guide the plan should include:**

- **planning sessions and surveys with the web board and state agency officials;**
- **in-depth participation in and review of leading e-government issues, trends, and web analyses;**
- **strategic planning sessions, discussions, and surveys with Connecticut's IT staff and leadership;**
- **engagement with Connecticut citizens and businesses on preference and needs; and**
- **discussions and feedback from leading researchers.**

Across the four-year planning cycle, annual updates and adjustments should be made, along with reports on progress to stakeholders.

Given the potential informational value of the individual agency IT plans, a specific statutory reference for the agency IT plans' content requirements and mandatory submission must also be made. Therefore, **C.G.S. 4d-7 (c) shall be amended to include a mandate for the annual submission of an agency IT plan by each executive branch agency. The agency IT plan must be prepared in compliance with the DOIT prescribed template unless the CIO has specifically authorized an exemption for the agency. At a minimum, the agency IT plan must include:**

- **the information technology priority objectives of the agency;**
- **major planned or ongoing initiatives related to information technology;**
- **specific IT projects to assist or provide service to the public;**
- **steps taken to conduct transactions electronically;**
- **a summary of web statistics compiled and how they are used;**

- **any IT initiatives to coordinate with other state and local governmental entities; and**
- **efforts the agency has taken to develop public and private partnerships to accomplish the information technology objectives of the agency.**

Collaboration Efforts

Collaboration and partnerships within, and outside, an IT organization are vital in improving efficiency, services, and the overall success of e-government. Agencies still operate in silos and interagency cooperation is minimal. Collaboration and partnering must be done in a strategic sense to find beneficial situations for all parties involved. The newly proposed e-government director can help identify opportunities for collaboration in using web-based technology to increase the efficiency of government transactions. Therefore, the program review committee recommends, **there should be a cross boundary advisory group led by the new director of e-government. The director of e-government should solicit participation in the advisory group to foster various IT partnerships including: intra-agency (state agency-to-state agency), intergovernmental (e.g., state agency to municipal), and public-private (e.g., state and CERC). The group tasks should include to:**

- **facilitate collaborative agreements;**
- **identify opportunities, incentives and barriers;**
- **develop strategic risk management of cross collaboration initiatives; and**
- **communicate potential cross collaboration strategies with the web board.**

E-Government Project Management

According to the literature on best practices, e-government strategic plan priorities should be aligned with the project development process. As described earlier, the purpose of SDM is to institute uniform procedures that promote consistency in planning and execution of IT projects, resulting in more efficient projects.

Discussions with DOIT personnel indicate that the SDM process includes a Post-Implementation Phase that provides an opportunity for the project team members to conduct a meeting for lessons learned. This meeting allows discussion of what worked well on the project and what should be changed on future projects.

The program review committee staff did not conduct an exhaustive evaluation of SDM for two reasons. First, SDM applies to all IT projects, not only e-government initiatives. Second, it was recently established, with relatively few agencies experiencing the process. Nevertheless, the program review committee staff considered its survey as an opportunity to solicit some reaction from the state agencies that had experienced the SDM process.

The program review committee staff survey asked agencies to rate the impact of the SDM process on web project implementation. Almost half of the respondents reported that the question was not applicable, indicating that they had not yet gone through the process for web related projects which was instituted in 2008.

The agencies that did respond reported mixed experiences. The most positive impacts of SDM were that the projects achieved the desired outcome (48 percent) and the collaboration with other (non-DOIT) state agencies (63 percent). Collaboration with DOIT was equally rated as a positive (41 percent) and negative (41 percent) impact on the web project implementation. More agencies responded negatively to rating whether projects are finished on time and on budget. However, an almost equal number of agencies felt the process had no impact on budget.

As mentioned earlier, the implementation of SDM could yield several benefits. It allows DOIT to be aware of IT projects across agencies. The process fosters better coordination, eliminates redundant efforts, and helps leverage interagency and statewide investments. It assists in remediating risks and problems, and holding vendors accountable. SDM also helps agencies avoid project scope creep.

For these reasons, SDM may be beneficial tool for the successful development of information technology projects that may include e-government initiatives. However, *continued project team feedback and evaluation at the end of a project completion is critical to identifying improvements to SDM.*

One aspect that appears to be lacking in SDM is consideration of the staff resource impact of e-government projects, according to interviews with various state agency personnel. The SDM process does include a cost-benefit analysis that takes into account the staff resources necessary in the development and implementation of the new project. However, what impact the new e-government project would have on the existing staff resources is not reported or used in the SDM deliberations.

Consequently, *the state agency decision-makers have no reported knowledge of what effect new e-government services will have on the current workforce.* Follow-up discussions with various agency personnel suggest that resource or other cost savings are difficult to calculate. Adoption rates for e-government services are not automatic so it hard to predict what staff resources will continue to be needed for the different channels of service. Agencies are also hesitant to publicly report staff impact due to potential loss of workforce. Several agencies believe that they are already functioning at low staff capacity so the benefit arising from implementing a new e-service would be to deploy existing staff to other functions.

Nevertheless, the potential impact of new IT projects on existing staff resources should be considered in the initiation of the SDM process. Therefore, the program review committee recommends that **DOIT should incorporate a staff resource impact analysis component into the SDM process. Similar to the guidance DOIT provides to agencies to develop cost-benefit analysis, DOIT should assist state agencies to develop criteria and common methodology to estimate resource impact for IT initiatives.**

It is important to note that this resource impact analysis is proposed for project planning and implementation purposes; it is not intended to measure or capture cost savings. The literature on the use of information technology indicates that the private sector has experienced significant cost savings from shifting customers to self-service web transactions. Unlike the private sector, governments cannot simply eliminate other service channels such as physical offices or mail-in services for its consumers. In most cases, governments must continue to provide other service

methods because the Internet is not easily available to all citizens. At best, governments can encourage reduced customer service costs through self-service transactions.

The e-government literature generally agree that the strategic use of information technology can help drive down the administrative expenses of internal functions like printing, postage, sorting, scanning, data entry and error correction. However, this is not an automatic cost-saving. Cost savings are linked to e-government adoption rates. Government will not realize cost savings from most e-government applications until they focus more time and resources on increasing adoption rates for online services. Methods for measuring and marketing usage of online services are provided in Chapter V.

Chapter V

Customer Centric Electronic Information and Services

Citizens are looking to government to become more like the private sector. To meet customers' expectations, the state portal will increasingly need to provide more convenient service to Connecticut residents 24 hours a day, seven days a week, through an easy-to-understand web connection to government services and information. The continued development of electronic government services should serve as a catalyst for redesigning better ways of improving citizen access to government.

Chapter III of this report looks at Connecticut's web presence and discusses user friendliness and content. This chapter delves further into web development, and examines use and analysis of web traffic statistics, online surveys, and other feedback as ways in which Connecticut could better gauge visitor satisfaction with a state's main portal, as well as individual agency websites.[32] Proposed recommendations are to ensure that the citizen and business perspective is considered as part of a more deliberative approach to creating and presenting online content.

Web Analytics, User Feedback, and Marketing: Best Practices

There are key tools available that help measure how well a state's main portal and individual agency websites meet citizen and business user needs. These tools include: 1) the use of web analytics;[33] 2) feedback links on a state's main portal and agency websites that allow users to electronically submit comments to a webmaster about the website; and 3) the use of online surveys to solicit users' opinions.

Taken together, these three methods provide a mechanism for a state to obtain both quantitative and qualitative performance measurement data that can be used to:

- examine website performance and determine user characteristics;
- gather insight into the needs and wants of website users;
- identify website areas that should be redesigned; and
- manage content based on user need.

Use of these tools on a consistent basis is considered a best practice for managing the overall state portal, as well as individual agency websites. It establishes a system for regular collection, analysis, and evaluation of data that shows how well a website is meeting its objectives, and provides focus on how to improve a website. States that use these tools target

32 A source of guidance for web development is provided by the federal government website "Webcontent.gov." This website defines website usability as "the measure of the quality of a customer's experience when they interact with your website."

33 As defined by the Web Analytics Association, "web analytics is the measurement, collection, analysis and reporting of Internet data for the purposes of understanding and optimizing Web usage," www.webanalyticsassociation.org.

site content to meet user need and hone marketing of online services to increase citizen and business satisfaction with online experiences. Even within customer groups of similar demographic characteristics, there can be very different sets of needs, access preferences, and histories of interaction with governments.

Web analytics. The purpose of collecting data and compiling web statistics is to understand how well a website is fulfilling its objectives and meeting the needs of its targeted audiences. In order to evaluate web traffic on a particular website, it is necessary to have analytical software that captures and aggregates a variety of measures, like the ones identified in the Table V-1.

Table V-1. Examples of Key Web Analytics

Statistic	***Definition***
Visit	Number of visitors who come to the website
Page View	Number of pages viewed by a single visitor
Average Amount of Time Spent on Website	The sum of all times on page for a visit
Top Pages	The most viewed pages in your website
Time on Page	Time measured by subtracting the time a visitor hit a page from the time they hit the next page
Top Search Keyword & Top Search Phrases	Terms visitors type into your search box to find information on your site, which reveal specifically what people want from your site
Most Downloaded Files	The most downloaded files to the least downloaded files
Site Bounce Rate	A visit with one page view (visitor likely didn't engage).
Web Browsers by Type[1]	Identifies which browsers visitors are using to view the website

[1]Web Browsers - a web browser is the program people use to access the World Wide Web, such as Microsoft Internet Explorer, or Apple Safari.
Sources of data: Department of Information Technology and Google Analytics Definitions.

The table shows a few examples of the type of data generated through web analytics. The statistics can be used to improve a website by revealing the most commonly used aspects of a website, which may be enhanced to deliver better customer experience.

Feedback links and online surveys. Best practices regarding website design suggest that there should be an opportunity for website visitors to provide input about the website to a webmaster, the individual(s) responsible for maintaining a website. Visitors access a "feedback link" on the homepage of a website or, alternatively, or the website offers the visitor the chance to complete an online user survey. One important question that can be asked in an online survey is whether the user was able to complete the primary task for which they came to the site. It also gives the visitor the opportunity to provide comments related to a website's design, including navigation and ease of website use, as well as location of content. More sophisticated websites use online surveys that ask specific questions and have response categories that the user can check off (and the responses can be more easily quantified) rather than just a link to the webmaster's e-mail address. Online surveys can be administered either through a link or through a pop-up window that randomly selects a user and asks if they will complete the survey.

Marketing the state portal. Marketing the state portal is an important part of a state's overall strategy because it increases individuals' knowledge of the types of information and services available in a single location. Marketing can also increase the adoption rate of new online services by encouraging people to complete a transaction online rather than continue in the traditional method (i.e., mail in or face-to-face contact). If adoption rates of the new online service are high, efficiencies can be created. Marketing increases citizen and business awareness of online service by informing them that a new, more convenient method exists.

Web Analytics, User Feedback and Marketing in Connecticut

Limited use of web analytics. The Department of Information Technology has had a contract since 2003 with a company, Webtrends that specializes in web analytic software. However, according to DOIT, it is cost prohibitive to run web traffic statistics for the state's main portal (CT.gov). The reason is that the cost of the Webtrends contract is based on page views, and the large number of visitors using the main portal as a gateway to state agency websites would exceed the number of page views allowed for analysis under the current contract.

Because of this contract limitation, no statistics have been collected on the state's main portal since 2005. Individual agencies can either use Webtrends or request these statistics from DOIT. It is up to each state agency whether to collect web traffic statistics on its own website, and if so, how to use this information to improve user experiences.

DOIT has provided written guidance to state agencies on key web traffic statistics to review (see Appendix N), and how to interpret them. The written guidance does not offer specific suggestions on how to improve a website, explain how to evaluate whether program content should be offered or removed, or redesign the location of content based on analysis of web traffic statistics.

During interviews with PRI staff, DOIT personnel indicated that the department intends to switch from Webtrends to free web analytical software. However, DOIT still will not be able to run web analytics on the main portal because the free software also has limitations on the number of page views allowed. In addition, once the switch is made, web traffic statistics cannot be generated historically, but will only track web metrics from the date of the change. DOIT could run these statistics for those agencies that have not ever collected them so each agency could have a baseline. DOIT states that every designated web administrator within an agency will continue to have the ability to run data to generate a report, but the decision to do so and how the data is used, will still reside with each agency.

The PRI committee e-government survey asked each state executive branch agency a series of questions regarding their review of web traffic statistics, the review frequency, and how the agency used the information. Of the 51 responses received, 30 agencies (59 percent) used web analytics and 21 agencies reported they did not.

For agencies that examine web traffic statistics, the frequency of use varies. Seventeen agencies stated that they examined them for FY 10, and 13 agencies provided a written-in response. Comments varied with one agency examining web traffic in 2009, some performing monthly or quarterly examination, and others only reviewing statistics for specific programs.

Additionally, three agencies stated that they review them weekly; nine, monthly; seven, quarterly; and 12, yearly or longer.

The survey also asked agencies that use web traffic statistics to describe how they use the information. In general, those agencies responded that they use them to improve website design and content.

Limited use of feedback. The Department of Information Technology includes among its published web guidelines a recommendation that each state agency identify a "Webmaster Contact." This guideline has evolved on Connecticut's main portal into a "send feedback" link that provides the user with the email address of the portal webmaster and allows individuals to submit feedback electronically. According to DOIT, they receive only a few submissions per month through the main portal, and the feedback usually concerns questions for specific agencies or requests for information, not comments on the website.

Limited use of feedback on agency websites. As part of the evaluation of state agency websites, PRI staff found 45 of 65 reviewed agencies (69 percent) include a webmaster contact. In addition, the PRI survey of state agencies asked whether the agency receives feedback via its website. Of the 49 agencies responding to the question, the majority (27 agencies or 55 percent) did not receive feedback, while 22 agencies did. For those receiving feedback:

- the number of user submissions ranged from one or two per month, to more than 50 per month;
- the information was used for a variety of purposes, including improving the agency's website layout, gauging program interest, and adding or removing specific program content; and
- two agencies had a written policy concerning how to handle feedback.

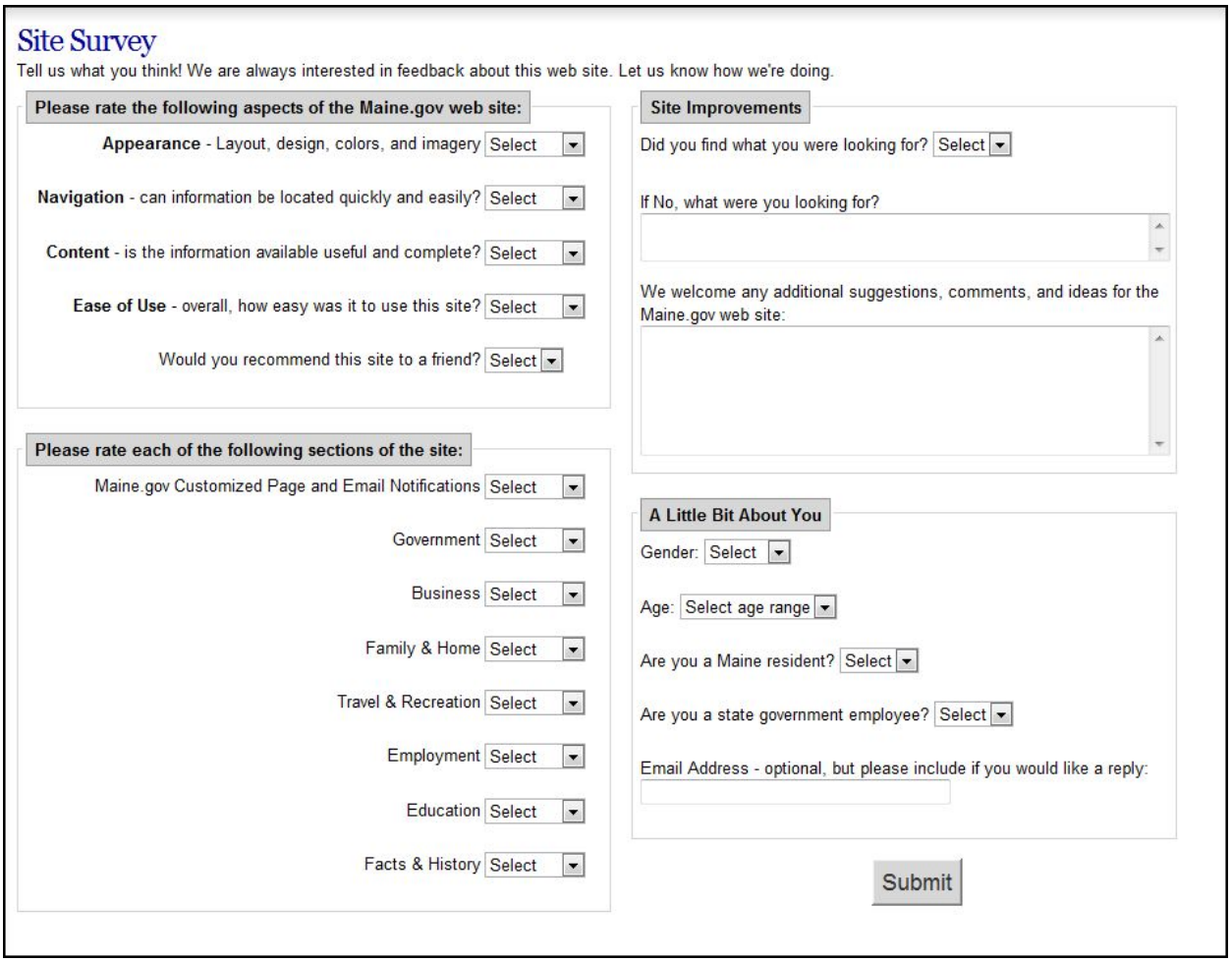
No statewide marketing strategy. The PRI committee e-government survey of executive branch agencies asked respondents an open-ended question about how the agency markets its web services. There were 49 responses and eight agencies skipped the question. Most agencies include a website address on agency publications (e.g., brochures, posters, fliers), agency letterhead, staff business cards, and staff-mails. Many agencies worked with professional trade associations to insert information into publications. Inserts were also placed into renewal notices by agencies that license individuals and businesses notifying them of the availability of online licensure. Media-related avenues, such as radio and television announcements and press releases, were also frequently cited as ways in which agencies informed the public about a new online service.

Web analytics and feedback in leader states. Program review committee staff interviewed Maine IT officials regarding how feedback is obtained and used to improve its state portal. Maine has focused on generating and using web analytics for its main state portal. They have done so because they believe promoting the portal will provide easier access to online services for its citizens and businesses. Maine has relatively extensive portal feedback mechanisms. Like Connecticut however, state agency collection and use of web traffic statistics are the domain of the individual agencies.

The Maine Information Network (a private network manager) has day-to-day responsibility for the state portal, including assessing web traffic statistics quarterly for it and preparing a summary report for the InforME Board, the public board for e-government oversight.

Online surveys. Maine's portal also provides a link to an online user survey that asks visitors to evaluate whether the information provided was useful and rate the quality of specific sites, using drop down menus. As shown in Figure V-1, it also asks for demographic information and provides for open-ended input. A separate survey is offered to users (mainly businesses) that have paid a subscription fee in order to access premium online services.

Figure V-1. User Survey from Maine.gov.



No online user surveys were found on any Connecticut state agency websites or on the state's main portal. Program review committee staff identified several other states with links to online surveys on their main state portals, including Hawaii, Idaho, Indiana, Rhode Island, and Tennessee. Maine and Rhode Island were the only New England states that had online surveys on their main portals.

Maine also recently completed a comprehensive 2009 User Needs Reports that evaluated awareness of and satisfaction with the state's portal, "Maine.gov," by asking respondents about their usage of online services and interest in new online features and services. Customized surveys were sent, in both electronic and paper form, to 5,238 citizens, businesses, and state and municipal government employees to obtain information from each major user group.[34] The study found a strong demand for more online government services from all groups surveyed, while younger citizens wanted more mobile services and social media interaction.

Utah's template for every web page viewed has a link at the bottom for feedback. The feedback link brings the user to a "Was this useful?" survey as well as an email address for comments. In addition, Utah.gov logs all calls, chats, and emails, as well as customer feedback tools, and is able to quickly monitor the impact (positive/negative) a customer experiences when using an online service. The goal for each online service is to obtain a 95 percent (or higher) response from citizens who find the online service "very easy" to use. If citizens rate an online service below 95 percent, the reasons why customers might be having difficulty are researched, and changes are made to the service.

Marketing in model states. Web portals provide website users with a single point of contact for online access to state information and online services. Committee staff discussed with IT personnel in other states marketing strategies used for the states' main portals and whether agencies marketed their own websites directly. According to the general manager of Maine's portal, marketing is a key aspect of increasing awareness of the information and online services available through Maine.gov. As part of the marketing strategy, InforME regularly measures the types of services being used online, and then works with state agencies to increase public awareness and create incentives.

Using web statistics, the InforME board analyzes user groups to ensure that the online service meets their needs. InforME focuses its marketing on its portal, and not on individual agencies. Similar to Connecticut's marketing strategies, other states issue press releases, work with industry and trade associations, offer opt-in email reminders, and use targeted mailings.

In Utah, marketing of the state's main portal has also been accomplished through the use of social media. Several states use Facebook and Twitter to post news, announce new services, and provide information to users quickly.

34 Maine Information Network, *2009 User Needs Analysis Report,* December 2009.

Finding and Recommendations: Web Analytics, User Feedback, and Marketing CT.gov

Through interviews with DOIT personnel, agency responses to the survey, and evaluation of state agency websites, PRI staff found that *there is no statewide systemic collection or evaluation of web traffic statistics, use of feedback links or online user survey on state websites to gauge web site visitor experience.* Further, although the main portal and the state website template contain a link for electronic submission of feedback on the home pages, not all agencies have chosen to retain this feature. Finally, no feature exists that allows users to take online surveys regarding their experiences, on either the main portal or within specific agency sites.

A systemic evaluation of state website use – including web traffic data and customer satisfaction – would provide key information to help the state improve its online services. Promoting "CT.gov" without analyzing its users does not give a clear picture of whether citizens are finding the information they need or completing the online tasks they want to perform. To better target web content and to expand public recognition of "CT.gov," and online government services, the program review committee recommends:

The newly established E-Government Board shall adopt performance measurement goals for the state's main portal. Such goals shall include targets for implementing new online services, and reaching specific web metric benchmarks, including but not limited to increasing the utilization of existing and new online services (i.e., adoption rates).

The Department of Information Technology, in consultation with the E-Government Board, should develop an online user survey that captures visitor experience and satisfaction with the state of Connecticut's online presence and offer the feature through the state's main portal and template.

The Department of Information Technology shall provide the E-Government Board with web analytics for the main portal, including those that measure progress toward achieving any identified benchmarks so the board may determine if goals set by the board for the main portal have been met. The Department of Information Technology shall also semi-annually provide the board with an aggregated report showing the results of the online survey.

Based on its evaluation of web statistics on the main portal and any feedback received through surveys or other methods, the E-Government Board shall recommend changes to the portal's design and/or content, establish new goals for the portal if previously established goals have been met, and use such information in assisting in prioritizing online service to be offered to the public. The Department of Information Technology shall consider the board's recommendations when making changes to the state portal, CT.gov.

The Department of Information Technology shall report web traffic statistics for all state agencies not less than annually and post them on its website.

The Department of Information Technology should identify strategies for state agencies to consider in improving location of website content, when appropriate. Each state agency should have a website workgroup that meets periodically to discuss agency website content and presentation and how best to improve it based on web analytics or other feedback provided.

Utilization rates for online services are important to track because they can assist in estimating the expenses incurred to put a service online and help determine whether the online service will be as or more efficient than its offline counterpart while meeting customer expectations. A marketing strategy will help drive up utilization rates if the service is easy to use and the appropriate group who will use it is targeted.

Marketing CT.gov. Connecticut's main portal, CT.gov, serves as a gateway to all three branches of state government, not just the executive branch. Marketing the portal as a single way to access state government information and online services available is an efficient way in which to enhance Connecticut's web presence.

The E-Government Board shall adopt a marketing strategy to brand "CT.gov" as the primary website to enter for information and services about state government. The Chief Information Office within the Department of Information Technology shall implement the strategy.

APPENDICES

Appendix A

Other States Profiles: Maine.gov

E-Government Definition

Maine defined "electronic services" by statute in 1998 to mean: "services provided by InforME through electronic means… Electronic services includes, but is not limited to, providing information, processing credential renewals, completing forms and filing documents." Within the same act, the state legislature adopted the InforME Electronic Access to Public Information Act, which created a self-funded public-private long-term partnership to build a portal network to provide public information and e-government services. NIC, the parent company of Maine Information Network (MIN), was granted the original contract in 1999 and then again in 2008.

Governance Structure

The InforME Board is a 15-member entity that combines government and private business interests, education and association representation, all focused on creating the policy that will drive the portal, Maine.gov. Board members include state agencies who are major data custodians, a representative from the University of Maine System, one member from a municipalities association, a non-profit organization advancing citizens' rights of access to information, and a representative from the libraries. Most Board members are appointed by the governor, with the exception of one public member appointed by the state House and one by the Senate.

The board approves the master contract with MIN, which has 20 employees responsible for developing online services in conjunction with state agencies and day-to-day operation of the portal) and reviews and approves all Service Level Agreements (i.e., development and implementation of online services provided by MIN) with state and municipal agencies. The board also develops InforME's three-year strategic plans and provides input about InforME's priorities and policies. The e-government manager within the Department of Administrative and Fiscal Service's Office of Information Technology provides staff to the board.

Executive Order. In 2005, the governor of Maine issued an Executive Order concerning e-government web services. Under the order, the Chief Information Officer of the Office of Information Technology is charged with identifying and coordinating one-stop services or similar services that can be provided to clients from a minimum of service points. It required the CIO and InforME to develop accessible web service templates for all departments to utilize to ensure unified and appropriate electronic government services to customers and clients.

Office of Information Technology. Although InforME has primary responsibility of delivering electronic government services to the public, state agencies also develop web offerings in conjunction with the Office of Information Technology. All online services

however, are marketed through its state portal since identifying the agency within state government responsible for a particular service can be confusing to citizens.

Strategic Planning

The InforME Board establishes a strategic plan every three years. The most recent plan, covering 2010-2012, sets the key goals and direction for InforME, to ensure that it continues to achieve its vision for serving both government and the public. It contains three over-arching goals and the strategies to achieve them. They are to:

- "promote the long-term financial stability and viability of the portal, which includes creating a portal study group to look at current revenue and possible revenue models, and examine web traffic statistics to measure portal strength;
- continue the transformation of Maine.gov into an ever more relevant and useful one-stop portal, which includes strategies to increase online service adoption rates and expand online service offerings; and
- provide leadership in the discussions regarding creation, administration, and delivery of public information, individual privacy, concerns about identity theft or safety, email spam, transparency, freedom of access, and commercial value of bulk data."[35]

Use of Portal and Citizen Feedback

In addition to tracking web traffic statistics, InforME monitors citizen feedback regularly through online feedback and periodic surveys. Comments and responses received through these methods are incorporated to any website enhancements or redesigns.

In fall 2009, Maine Information Network conducted a Maine.gov/e-Government analysis that included an online survey of more than 5,200 residents and businesses. The study assessed user satisfaction with existing online services, interest in new features and services, and the role of demographic factors such as age group. The survey found high satisfaction among the business users of Maine.gov, but all groups indicated a strong demand for more online government services. Younger users expressed more interest in mobile services and social media, while citizens in their 30s-50s were most likely to request e-democracy services such as online broadcasts of meetings and online tracking of legislation.

Online Services

InforME offers more than 300 e-government online services to citizens and businesses through Maine.gov. The portal provides a citizen-focused gateway to Maine government information, bringing together information and services from across state and local government agencies into a centralized user-friendly format. Information in the portal is organized by topics and tasks rather than by bureaucratic structure. Content is frequently updated which keeps the site useful and encourages repeat visits.

35 http://www.maine.gov/informe/board/strategicplan.htm

Site visitors may choose from a variety of methods for navigating, including broad topics such as "Business" and "Travel & Recreation ", special features such as Local Government or eDemocracy, or the search engine. Help is provided to site visitors through Live Help, the Help Center, "How Do I...?" feature, and "Ask a Librarian" feature.

The most visited features of Maine.gov included the Agency Directory, News, and the site search. Some of the most popular online services include hunting and fishing licenses, vehicle registration, traffic ticket payments, and free services such as foliage reports, lottery numbers and unclaimed property search.

Awards and Recognition

Since 2001, Maine has received 35 national accolades for website development with four awards in 2010. These include awards for best of the web, government transparency, top government website, demonstrating a standard of excellence. In September 2010, Maine.gov was ranked fourth in the 2010 Best of the Web Awards for state government Web portals. Maine was also ranked number 1 in a 50-state study of government websites by Rutgers University completed in 2008. A similar study examining government websites by the Brookings Institute ranked Maine 6th.

Other States Profile: Mass.gov

E-Government Definition

Massachusetts does not have a definition of e-government.

Governance Structure

Massachusetts's official web portal is Mass.gov. The state's central information technology agency is the Information Technology Division (ITD) within the larger Executive Office for Administration and Finance. The portal is maintained by the Office of Mass.gov, which is a distinct office within ITD.

In 2000, there was a e-government task force, the results of which led to the creation of the web portal and the semi-centralization of website services. In 2009, Governor Patrick issued Executive Order No. 510 which, among other things, called for the formal centralization of all IT services within the state. The executive order also altered the IT planning structure to enhance planning at the secretariat and statewide levels.

Massachusetts Portal Advisory Board. The Portal Advisory Board is made up of one representative from each agency involved with Mass.gov. The board was adopted by the Office of Mass.gov as a best practice and does not have formal reporting requirements. However, bi-monthly meetings are used for "two-way dialogues" with clients (i.e., agencies) and for keeping members up to date on current projects and initiatives.

The purpose of the Portal Advisory Board is to:

- "Advise Mass.Gov on strategy, policy and priorities and serve as a forum to advocate for specific Mass.Gov improvements;
- Serve as a vehicle for Mass.Gov to keep customers up to date on major Mass.Gov initiatives;
- Serve as a vehicle for agencies to keep each other and Mass.Gov up to date on major e-Gov initiatives, and as a forum for agencies to identify common interests and opportunities for collaboration."[36]

The board is charged with gaining greater adoption of Mass.gov and finding ways to increase citizen engagement, improve online services, and reduce the costs and barriers of government. Massachusetts IT personnel indicate that there is significant overlap between members of the Portal Advisory Board and contributors to the overall IT strategic plan.

36 Mass.gov - **www.mass.gov/itd/pab**

Strategic Plan

The core of Massachusetts's e-government efforts were codified by the 2000 E-Government Task Force. The published findings from the task force include major sections regarding:

- the benefits of e-government;
- Massachusetts e-government as of 2000;
- an enterprise approach to e-government and the portal;
- task force workgroup reports; and
- implementation roadmap.

E-government planning is now incorporated into the overall IT strategic plan. Massachusetts has no official definition of e-government, so there is no reference to e-government within the IT strategic plan. However, the IT plan does mention several e-government related priorities. Most importantly, the plan for FY 2009-2011 includes a "vision for IT in the Commonwealth," two of the three of which are e-government related:

- "efficient and easily accessible services;" and
- "open and transparent engagement with citizens."

Use of Portal and Citizen Feedback

The Office of Mass.gov tracks web statistics on the main state portal and individual agency websites. The information is gathered and published monthly on the ITD website. In addition to web traffic statistics, the Office of Mass.gov contracts with a private vendor, ForeSee, to randomly survey website users on the functionality and ease-of-use of the website.

Online Services

Mass.gov offers nearly 200 unique services to the approximately 2 million site visitors per month. The list of services offered is available in whole or can be sorted by major customer type (i.e., resident, business, visitor, state government). The list is then further categorized into one of 40 types (e.g., getting around, local government, getting a business started, jobs & employment).

In approximately eight years of existence, Mass.gov reports having "tackled the low-hanging fruit", specifically citizen services such as taxes and driver's licenses. The office is currently working on implementing enterprise-wide data projects which will make more cross-agency coordination of projects more efficient (or possible at all).

Mass.gov and the services therein are maintained by the Office of Mass.gov without a private partner. There are no service fees or subscription services. Massachusetts agencies that have online financial transactions are required to use the state-contracted ePay system. This system charges the agencies a small amount (40 to 80 cents) per check transaction or a higher amount (1.9 to 3.0 percent) per credit card transaction. In most cases, the agencies fund the

online payment system using existing fee levels alone (i.e., no additional user cost), though there are a few instances were the cost of the financial service is added to the base fee (i.e., user pays the credit card charge).

Awards and Recognition

Mass.gov has received numerous awards and distinctions since 2002. In 2002, the site won the E-government Trailblazer award from the Government Solutions Center. The site was recognized by Government Computer News as a "Great .Gov Website" in 2008. In 2010, the website sunshinereview.org awarded Mass.gov an A+ for transparency.

Other States Profile: Michigan.gov

E-Government Definition

Michigan does not have a definition of e-government.

Governance Structure

Michigan's official state website is Michigan.gov. The Department of Technology, Management and Budget (DTMB) is the central state information technology agency in Michigan. Although the state of Michigan does not have a separate unit for e-government, the specific e-government functions are assigned throughout the Enterprise Division within DTMB. DTMB is responsible for managing the state web portal and preparing the state strategic plan in conjunction with several external stakeholders including an advisory council.

Michigan advisory council. The Michigan Information Technology Executive Council (MITEC) was established as an advisory/coordinating body to the state CIO and DTMB to provide an end-user and agency perspective. The state CIO chairs MITEC with the membership consisting of deputy directors, administrative officers or comparable level executives or administrators from each of the 19 client departments; three representatives from the legislative branch; and one from the judicial branch. Subcommittees are formed that are specific to certain areas and address issues and makes recommendations on a statewide basis. Although agency participation is voluntary, Michigan IT officials say involvement is motivated by agencies seeing the value of the process and the need to find common solutions during difficult budget constraints.

The council assists DTMB identify critical statewide and agency-specific IT service and management issues, and collaboratively identify, develop and implement solutions. The council serves as a forum in which agencies may discuss their IT-related issues to ensure they are acted upon in a responsive and timely manner. MITEC assists and participates in the development of integrated IT plans and to develop consensus and an integrated business case among agencies before presenting IT related proposals.

The council meets at least six times a year for regular business sessions and may convene periodically for ad-hoc meetings on specific topics. Recommendations to the CIO are made by consensus of those present at each meeting. If consensus cannot be reached, the pros and cons of opposing arguments are submitted in writing to the CIO and documented in the minutes.

Strategic Planning

Michigan's e-government initiatives are addressed within the broader IT strategic plan. A strategic management team, made up of the executive leaders of the DTMB is responsible for the vision and deliverables for the plan. The planning process begins with a review/update of the vision, goals and commitments made in the previous plan. After team consultation, the CIO establishes the updated goals that accomplish the plan's vision.

The tactical implementation of the plan is given to the core enterprise service team, which include the division directors who report to the department leaders. They ensure cross agency functions and assign specific resources and timelines to each deliverable of the plan. Through the agency information officers, which are equivalent to Connecticut's IT managers, the department uses tools such as surveys and priority setting exercises in their evaluation of current and past performance and in setting direction. These tools are briefly described below.

Surveys. The department created a web-based survey that is completed by the members of MITEC, the advisory body comprised of leaders from each of the 19 state departments, the legislature, and judicial branch. Among the 18 questions are:

- How has IT helped or fallen short in meeting your business demands?
- What do you see as your biggest challenges today and in the future?
- How do you see technology serving your business in the future?
- What technologies do you wish you were using?

According to Michigan, the survey responses help to align the goals of the plan and close the gap between what agencies need and the direction of the plan.

Strength, Weaknesses, Opportunities, and Threats (SWOT) analysis. Michigan also uses SWOT analysis findings to guide the development of the goals and targeted initiatives in the plan. SWOT events are held with MITEC, IT staff, and a variety of other stakeholders. The SWOT exercise highlights what the stakeholders feel about the organization at one point in time. It provides insight on the questions "What is working and what is not?", "What should we be doing?", and "What should we stop doing?" By examining perceived weaknesses and threats and then comparing them with strengths and opportunities, Michigan gets a clear picture of what needs to be done right away and what should be included in the strategic plan over the next five years.

Interviews. Michigan's information officers also carry out a series of interviews with their individual agencies. They ask questions to capture the business drivers of the agencies. Among the questions asked:

- How do you see your line of business changing (demand, service types, mandates)?
- In which areas do you expect your biggest challenges?
- Are you investigating new technology opportunities that will help you meet future business demands?

Combined with the SWOT results and the online survey, these responses provide the department with a better understanding of agency challenges.

Michigan's collaboration efforts. The Office of Technology Partnership (OTP) was created within DTMB to foster technology collaboration and improve the way government functions across boundaries. The cross collaboration program began with the establishment of a steering committee comprised of local and state government IT directors and associations. The

committee is co-chaired by members. Its purpose is to leverage existing infrastructure, applications, processes and resources. The expectation is to share resources to eliminate duplication of effort and reduce costs. Its goal is to build once, serve many, operate as one unit, have one simple entry point, reduce costs, provide better and more services to citizens and make crossing government lines seamless. The group works to develop strategies and policies across tiers, identify unique opportunities/barriers, stakeholders and incentives, identify shared business processes, and develop ways to allocate resources and share costs.

OTP also promotes technology collaboration and partnerships with business, schools, universities, and non-profit organizations. These partnerships interface with the state through many different offices, divisions, or agencies.

Use of Portal and Citizen Feedback

Michigan.gov provides a link to a customer survey on its main page. The survey is used for web improvement and statistical purposes. The portal director examines the survey results periodically as well as any results from social network survey tools.

In addition, Michigan takes a centralized approach to reporting performance measures and web metrics which are required for each agency. These measures are submitted to the central office group that has the expertise to know what to ask for, how to measure, and how to use them.

Online Services

Michigan has more than 300 e-services, many at one-stop websites like the Michigan Business One-Stop portal. This online service streamlines and bundles state processes, which businesses can access as a "one-stop" shop. Business owners can use this portal to start and register a business, apply for licenses and permits and pay fees entirely online. Another online service innovation is the Helping Hand portal which provides online human services help and information. Available through the Michigan.gov portal, users can click on one of five tabs for links to information on jobs, training, unemployment benefits, health care, family support and housing. According to Michigan, the site draws more than 50,000 visits per month.

Awards and Recognition

Since 2001 Michigan.gov has received 15 awards. In 2008, Michigan.gov received 2nd place for digital solutions and best practices among state agencies from the Center for Digital Governance. It was also a finalist for Best of the Web for most innovative, user-friendly state and local government portals as well as a finalist for the Digital Government Achievement Award which recognizes outstanding agency and department Web sites and applications.

Other States Profile: Utah.gov

E-Government Definition

Utah's e-government strategic plan defines e-government as "the use of information and communication technology by government to exchange information and services with citizens, businesses, and other government entities via the internet. The most important benefits of e-government include improved efficiency, convenience, and better accessibility to public services."

Governance Structure

Utah's official web portal is Utah.gov. The state's central information technology agency is the Department of Technology Services (DTS). DTS manages the state's main portal in cooperation with a partnership between the State of Utah and Utah Interactive, a private company. DTS provides all technology services to state agencies. There is a statutory prohibition against agency in-house IT staff unless approved by the CIO.

The state of Utah conducted a comprehensive baseline study and needs assessment of e-government in 2007. Utah now has an assigned director of e-government as well as a separate strategic plan specifically for e-government in addition to the state's overall strategic plan for information technology. By statute, IT priorities are set in the state strategic plan prepared by CIO in consultation with all cabinet level officials and the technology advisory board.

Utah advisory board. Utah's Technology Advisory Board consists of seven members: three appointed by the governor who are individuals actively involved in business planning for state agencies; one member appointed by the governor who is actively involved in business planning for higher education or public education; one representative from the legislature appointed by the House Speaker & Senate President; one representative from the judicial branch appointed by the Judicial Council; and one member appointed by the governor who represents private sector business needs in the state but is not an information technology vendor for the state. The board selects the chair from among the members. DTS agency provides staff to the board. The board serves at the call of the chair and meets as many times as necessary.

Among the board responsibilities is to advise and assist the CIO to generate consensus among the executive branch agencies on:

- the development and implementation of the state's information technology strategic plan,
- critical information technology initiatives for the state,
- identification of the business and technical needs of state agencies,
- the department's performance measures for executive branch agencies and subscribers of services, and
- the efficient and effective operation of the department.

Strategic Planning

The CIO is required to consult with all cabinet level officials and the advisory board in the development of the executive branch strategic plan. Utah law mandates the CIO to prepare an executive branch strategic plan that addresses:

- interchange of information between executive branch agencies,
- coordination between agencies in the development and maintenance of information technology and systems,
- protection of the privacy of individuals who use the state systems,
- priorities for the development and implementation of information technology and systems, and
- maximizing the use of existing state information technology resources.

In addition to its statewide strategic plan, Utah also prepares a specific plan for e-government. The plan has specific e-government objectives including, but not limited to:

- implementation of an anticipated 50 new online services each year for the period 2010-2013,
- an increase in average monthly unique visitors to the Utah.gov to 1.2 million,
- have over 11 million secure payment transactions annually, and
- further increase government transparency and openness.

According to the Utah, information technology strategic goals and initiatives should be measurable in terms of results, completion of deliverables, and adherence to cost estimates and project timelines. As such, a balanced scorecard is utilized to measure department's success in achieving goals and demonstrates areas where improvement is needed. The department developed the balanced scorecard metrics and uses the information as a base for the overall strategic plan.

Utah's agency IT plans. In Utah, each executive branch agency is statutorily required to submit an annual agency information technology plan to the CIO. The agency IT plan must include:

- the information technology objectives of the agency,
- any performance measures used by the agency for implementing the agency's information technology objectives,
- any planned expenditures related to information technology,
- the agency's need for appropriations for information technology,
- how the agency's development of information technology coordinates with other state and local governmental entities,
- any efforts the agency has taken to develop public and private partnerships to accomplish the information technology objectives of the agency, and

- the efforts the executive branch agency has taken to conduct transactions electronically.

The plans are reviewed and approved by the CIO in conjunction with the department division staff to ensure compliance with strategic goals and state information architecture.

Utah's collaboration efforts. Utah law also requires the CIO prepare an inter-branch information technology coordination plan that provides for the coordination, where possible, of the development, acquisition, and maintenance of information technology and information systems of the executive branch, judicial branch, the legislative branch, the board of regents, and the state board of education. The plan is considered an advisory document.

Use of Portal and Citizen Feedback

Every site page has "Was this useful?" survey as well as email address for comments. Utah.gov logs all calls, chats, emails, and feedback tools and are able to quickly monitor the impact (positive/negative) a customer experiences when using an online service. The goal is for each online service to measure at least 95 percent of citizens finding the service "very easy" to use. If a service slips below 95 percent, the reasons why customers might be having difficulty are researched, and changes are made to the service.

The use of social media has been a big marketing push over the past two years with the new site redesign in 2009. Utah currently uses Facebook, twitter, Flickr to promote the Utah.gov site and to market to the citizens.

Online Services

In 2010, Utah.gov reportedly has 1,159 services online. In many cases the service available only online. The Utah.gov search feature was set up to offer results for all categories of government, including: services, entire site, agencies, and forms with a single search. To get results for the various categories, a user can simply tab through the options. This search design was entirely based on watching user interaction with the previous search feature. According to Utah, this is the most-used feature on Utah.gov, which allows citizens to explore government in one easy search on the home page. Some of the other more popular online services for citizens are purchasing hunting and fishing licenses, vehicle registration renewal, and driver license renewal.

Another large online initiative involved being able to implement a Geo-IP (Internet Protocol) Location Aware service, and tag all of the data with the services and location. Geo-IP technology reads a visitor's IP address in order to display content and information that is relevant to the user's physical location. This service enables the user to see public meetings and service notices in their area as well as view maps showing where their local parks, libraries and schools are situated. Utah is the first state to develop and provide this technology to citizens on their website. This project required countless hours of labor to gather and tag all the data that was necessary to provide this service.

Another feature allows citizens to chat live with a customer service representative to solve issues, provide help, and answer any question a user may have about online services. Utah reports the customer service team receives over 2,100 chats per month on average. The service is provided by employees of the Utah DTS in cooperation with Utah Interactive.

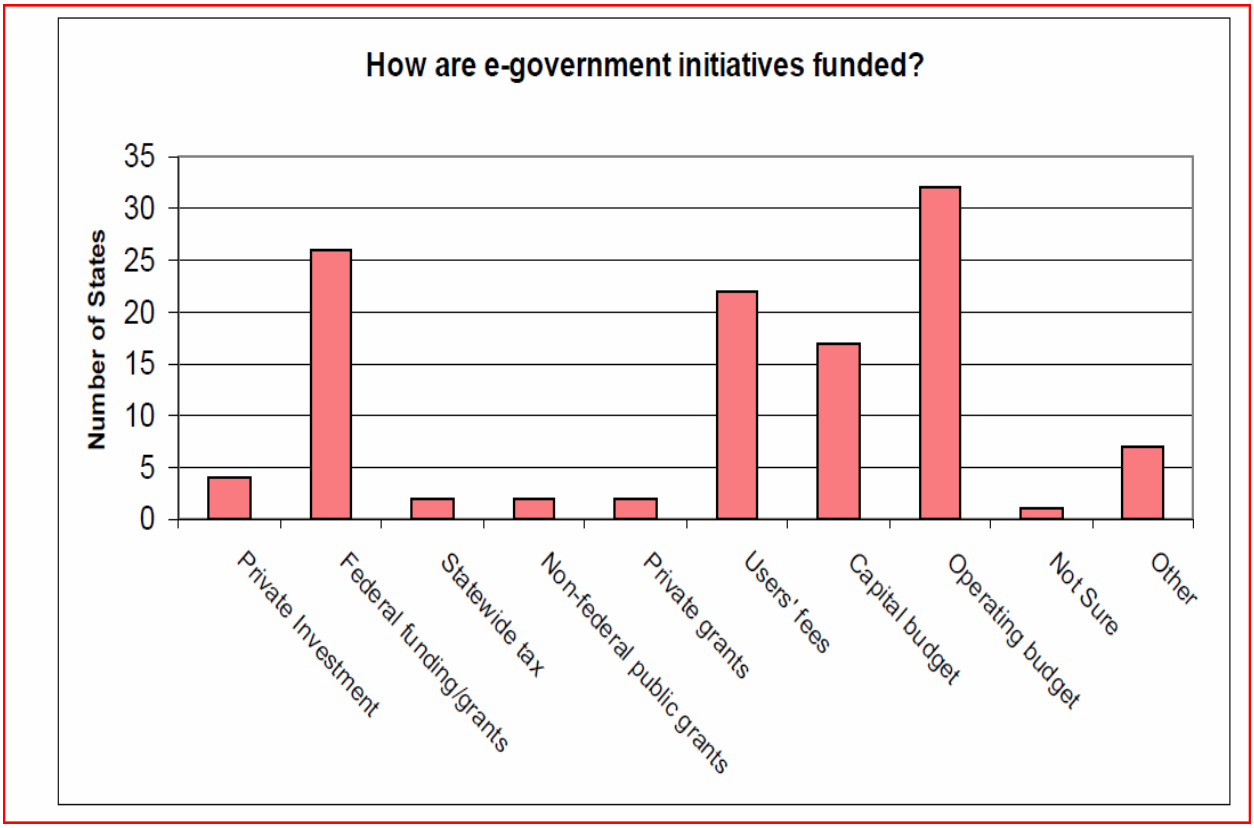
Awards and Recognition

Since 1996, Utah.gov has received over 30 national accolades for information technology with 13 awards in 2010. These include awards for creative excellence on the web and demonstrating a standard of excellence. Utah was also ranked as the best state government Web site in the 2009 Best of the Web Award, sponsored by the Center for Digital Government.

Appendix B

Funding for E-Government Projects

States use a variety of sources to fund e-government projects. These sources vary and include private investments to charging subscription and other user fees for individuals to conduct transactions online. In 2005, The Congressional Research Service contracted with the Lyndon B. Johnson School of Public Affairs, to conduct a study of state e-government strategies. As part of the study, states were surveyed on how they funded e-government projects**.** The figure shows the most popular funding mechanism for e-government projects was through general fund operating budgets, user fees, and by obtaining federal funds or grants.



Source; Congressional Research Service Report, State E-Government Strategies: Indentifying Best Practices and Applications, 2007.

According to the report, state general fund/operating budgets are the most common source of funding (32 out of 38 respondents), although the report notes most states use two or more types of funding. The second most common funding source is the federal government (26 out of 38 respondents). Another significant funding model relies on user fees, but only slightly over half of the respondents charge user fees to finance e-government initiatives, and most likely because it is thought that user fees decrease adoption rates of online services. Capital funds were also commonly used, likely as part of the initial investment and upgrade of legacy systems.

Governance and state portal funding. Table B-1 shows governance and funding of state portals. As shown in the table, twenty-two states outsource portal development and management (all with a company called NIC that specializes in developing online services based on a transaction fee approach), while other states rely on state funding of e-government projects.

Table B-1. Governance of State Portal	
Management of State Portal	***State***
Portal Outsourced (Funded via transaction and service fees)	AL, AZ, AR, CO, HI, ID, IN, IA, KS, KY, ME, MT, NE, OK, RI, SC, TN, TX, UT, VT, VA, WV
Portal State Operated and Funded	AK, CA, CT, DE, IL, LA, MD, MA, MI, MN, MS, MO, NV, NH, NJ, NM, NC, ND, OH, OR, PA, SD, WA, WY
Source: North Carolina Office of State Budget and Management, Upgrade State Portal Report, Dec. 2009, p. 9.	

One example of the partnership with NIC is in the State of Maine. In Maine, NIC created a Maine subsidiary, called Maine Information Network (MIN) to work with InforME, the statutorily created public board responsible for prioritizing and approving e-government projects. Maine Information Network first entered into a long term $0 contract with the state in 1999 to build and manage a portal network and the contract was renewed in 2008. Funding for MIN comes from transaction and subscription fees associated with the e-government services created and managed by the network.

InforME's legislation does not allow any additional convenience fees to be charged in excess of existing statutory fees. Therefore, many of the online transactional services created by the network are funded by the agency, which gives a portion of the existing statutory fee to the network for those transactions that pass through the InforME portal. According to Maine IT personnel, the network manager earns approximately $3 million per year from their share of the transaction fee.

Since not all projects create an opportunity for revenue sharing between InforME and MIN, the network also contracts with state agencies for website design and application development projects for a fixed fee or at hourly rates. In addition, the Office of Information Technology, within the Department of Administrative and Financial Services assists state agencies with developing e-government applications. According to IT staff in Maine, the focus of MIN is on the state portal and transactional services, while agencies broader mission is to also make information available on websites.

In other states, NIC uses a similar model (in terms of creating a subsidiary), and uses a transaction-based funding approach if not prohibited by legislation. Under this approach, governments charge a modest fee (in addition to any existing statutory fees) to provide online services. These fees are primarily targeted at high-volume business users, while broader services for citizens are generally free.

Subscription fees for premium services. Another way that some states collect revenue is to charge an annual subscription fee to provide access to certain online services deemed "premium." Registered users pay an annual charge for the subscription and a transaction fee per

service. Most of the fee-based online services are geared toward business users and include such things as business filings, transportation permits, and motor vehicle records. PRI staff examined state websites and found that 12 out of 50 states had annual subscriber fees for access to premium services, as shown in Table B-2.

Table -2. States that charge Subscription Fees for Premium Online Services.	
State	**Annual Cost**
Alabama	$75
Arkansas	$75
Hawaii	$75
Idaho	$95
Indiana	$95
Kansas	$95
Kentucky	$75
Maine	$95
Montana	$75
Rhode Island	$75
Utah	$75
Virginia	$95
Source: PRI staff analysis.	

In Maine, PRI staff were told that subscriber fees generated approximately $60,000 in annual revenues. However, the state was considering phasing this fee out and implementing convenience fees instead, because it would generate greater revenue.

Currently the only state agency in Connecticut that refers to a convenience fee is the Department of Revenue Services. When paying Connecticut state taxes online, the website informs the payor that a convenience fee of 2.49 percent of the total tax payment will be charged to the payor's account by the credit card service provider. In actuality however, this fee is a Merchant Services fee, the fee charged by a financial institution to handle credit card processing of payments. For other online transactions in Connecticut, such as professional license renewals and motor vehicle registration renewals, the decision was made by the individual agencies not to charge a convenience fee because of the belief that any such fees would impede adoption rates of the new online service.

Appendix C

State Website Inventory and Evaluation

The most visible pieces of Connecticut's e-government structure are the state's websites, including both the overall state portal and the series of branch- and agency-specific websites. One of this study's objectives is to examine and inventory Connecticut's websites. The website inventory included classifying agency websites by:

- web addresses;
- domain name[37]; and
- type (e.g., department, bureau, commission).

The examination of websites built on the web address inventory and included an evaluation to determine the extent to which state websites:

- follow best practices (e.g., privacy statements, disability access);
- meet client needs (i.e., availability of information and online services); and
- fit into a cohesive statewide web presence (e.g., functionality of the state portal, template-based layouts, non-duplicative cross-agency features).

Web Address Inventory

A comprehensive list of state entities, which was not previously available, is necessary in order to compare the state's web presence to its physical organization. To compile the comprehensive list of state entities, two lists (sources 1 and 2 in Table C-1) from the CT.gov portal were used; these included links to the websites of most listed agencies. In order to confirm the completeness of the information on the state web portal, two other sources of data were used (sources 3-4 in Table C-1), though neither of the latter two sources included web address information. Simple web searches (i.e., entering an entity's name into Google Search) were used to find websites for entities that were not linked to on the state's web portal.

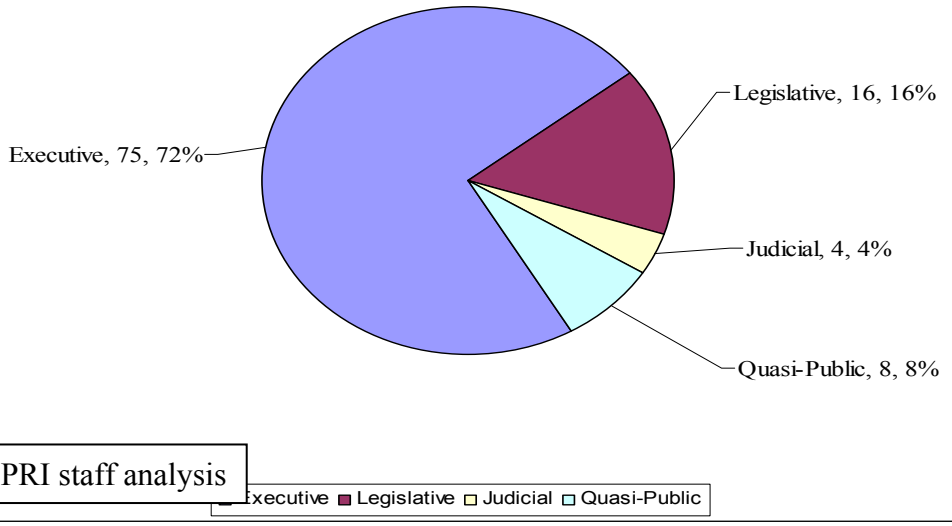
37 A domain name forms the basis of a website address and usually consists of a top-level domain name (e.g., com, edu, gov) and one or more second level domains (i.e., characters or words to the left of the ".com" or ".gov"). Classification by domain name can help users understand whether and how one website is related to another.

Table C-1. List of Sources Used to Assemble PRI Staff's List of State Entities		
Source Number	***Source Name***	***Number of Entities Added to List Based on Source***
1	CT.gov: Connecticut's Executive Branch of Government	91
2	CT.gov: Index of All State Agencies	19
3	Appropriations 2009-2010 Sub-Committee Assignment List	5
4	2008-2009 Digest of Administrative Reports	3
Source: PRI staff analysis		

State Web Addresses

From the above sources, 119 state entities across all branches of state government were identified, of which 118 (99 percent) have web addresses.[38] However, 16 executive branch agencies distinct web addresses despite having been closed or merged with another agency, leaving 103 entities. The majority of state entities - and websites - are part of the executive branch (72 percent). The website of the legislative branch includes the legislative portal, several commissions and major staff offices (16 percent).

Figure C-1. Entities by Branch of Government



Source: PRI staff analysis

38 The Connecticut General Assembly was not included through the sources in Table C-1, but was added to the website inventory.

State entities can be classified by type (e.g., department, bureau, commission, office). Classification by type gives a cursory look at the scale and role of the identified entities (i.e., a "department" is likely to have a larger workforce, in general, than a "council" and some "offices" are parts of "departments"). Table C-2 shows the number of entities that have various common classifications in their title.

Table C-2 Name Classifications of State Entities

Name Classification	*Executive*	*Legislative*	*Judicial*	*Quasi-Public*	*Total*
Department	25	0	0	0	25
Office	15	4	0	0	19
Commission	8	8	1	0	17
Board	7	0	0	0	7
Authority	1	0	0	6	7
College/University	5	0	0	0	5
Council	4	0	1	0	5
Division	2	0	1	0	3
Committee	0	1	0	0	1
Other	8	3	1	2	14
Total	75	16	4	8	103

Source: PRI staff analysis

Domain Name Classification

For those entities with identified web addresses, PRI staff analyzed basic information about domain names. Domain names are the alphanumeric combinations that are generally used in lieu of typing one or more specific IP addresses[39] because they tend to be easier to remember and help avoid confusion (e.g., ct.gov is the domain name for the IP address 159.247.0.240). Beyond ease of use, domain names are important to users because they can help identify a particular site as part of a larger, perhaps more well-known or trusted, web environment. Also, specific domain names (e.g., uconn.edu, ctlottery.org) may aid in marketing and communication to a target clientele.

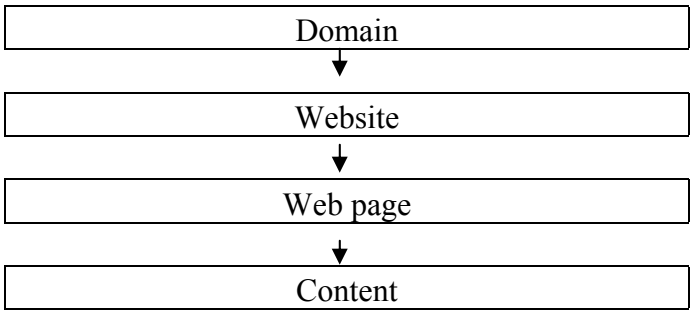
Domain names typically have several parts which include a top level domain (e.g., .com, .org, .us) and one or more second level domains (i.e., "google" in google.com). In 1985, the federal government established the country code top level domain of ".us" and reserved second level domains for each U.S. state and territory. In 1996, Connecticut launched its first statewide web portal using the domain name www.state.ct.us. In 2002, Connecticut created a new state web portal using the CT.gov domain name, which it continues to use today. The goals of the

39 IP addresses, short for Internet Protocol addresses, are typically a set of four numbers, separated by decimals, that identify a particular networked device (e.g., a website server, a personal computer) and enable communication between two or more devices.

move to the current domain included more efficient access of information between websites and increased quality on individual sites through adoption of a statewide website design template. However, agencies were not required to migrate from existing addresses to the CT.gov domain and, to date, several have not.

Web address hierarchy. A web domain is commonly thought of as a collection of websites or sub-domains. Additionally, websites themselves are a collection of individual web pages[40], as seen in Figure C-2.

Figure C-2. Hierarchy of Web addresses



Source: PRI staff analysis

To differentiate between websites within a domain, a sub-domain is used. For instance, the Department of Environmental Protection's web address is "www.ct.gov/dep", where "dep" is the sub-domain. It is also possible to insert a sub-domain within the domain name, such as the "sots" in the Secretary of State's web address "www.sots.ct.gov". Table C-3 shows the number of unique domain/sub-domain combinations associated with the various domain names.

Table C-3. Use of Domain Names

Domain	***Number of Entities****
ct.gov	59
state.ct.us	9
cga.ct.gov	15
other	17

Source: PRI staff

* lists only the amount of unique sub-domains, in 2 instances, multiple entities used the same sub-domain.

Most of the executive agencies use the ct.gov domain, and all legislative sites use the cga.ct.gov domain. The websites continuing to use the state.ct.us domain, including constitutional offices and executive agencies, are shown in Table C-4.

40 A web page is one particular page viewable on a web browser (e.g., Internet Explorer, Firefox). Each web page has a unique web address that includes the domain name, sub-domain if present, and an individual identifier that may either be a word or a collection of letters, numbers, and symbols. A website is composed of one or more individual web pages.

Table C-4. State Websites Using the state.ct.us Domain	
State Entity	***Website Address***
Constitutional Offices	
Office of the State Comptroller	http://www.osc.state.ct.us/
Office of the State Treasurer	http://www.state.ct.us/ott/
Quasi-Public	
Capital City Economic Development Authority	http://www.cceda.state.ct.us/
Executive	
Department of Administrative Services	http://www.das.state.ct.us/
Department of Labor	http://www.ctdol.state.ct.us/
Division of Public Defender Services	http://www.ocpd.state.ct.us/
Freedom of Information Commission	http://www.state.ct.us/foi/
Office of Protection and Advocacy for Persons with Disabilities	http://www.state.ct.us/opapd/
Workers' Compensation Commission	http://wcc.state.ct.us/
Source: PRI staff analysis	

The state websites that do not use the ct.gov, state.ct.us, or cga.ct.gov domains include the judicial branch, state colleges and universities, the state library, and various quasi-public authorities, as shown in Table C-5.

Table C-5. State Websites Using Non-standard Domain Names	
State Entity	***Website Address***
Connecticut State Library	http://www.cslib.org/
Judicial Branch	http://www.jud.ct.gov/
Executive Branch	
Connecticut Commission on Culture and Tourism	http://www.cultureandtourism.org/
Quasi-Public	
Connecticut Development Authority	http://www.ctcda.com/
Connecticut Health and Educational Facilities Authority	http://www.chefa.com/
Connecticut Housing Finance Authority	http://www.chfa.org/
The Connecticut Higher Education Supplemental Loan Authority	http://www.chesla.org/
Connecticut Innovations, Inc.	http://www.ctinnovations.com/
Connecticut Lottery Corporation	http://www.ctlottery.org/
The Connecticut Resources Recovery Authority	http://www.crra.org/
Higher Education	
Charter Oak College	http://www.cosc.edu/
Connecticut Community-Technical Colleges	http://www.commnet.edu/
Connecticut Distance Learning Consortium	http://www.ctdlc.org/
Connecticut State University System	http://www.ctstateu.edu/
Department of Higher Education	http://www.ctdhe.org/
University of Connecticut	http://www.uconn.edu/
University of Connecticut Health Center	http://www.uchc.edu/
Source: PRI staff analysis	

State Website Examination

Using the website inventory, 65 agency websites were evaluated. The websites of the legislative branch, judicial branch, quasi-public institutions and the higher education system were excluded.

The summary of website features examined and their available is in Table C-6.

Table C-6 Website Evaluation Methodology & Results

	Count (of 65)		*Percent*	
Criteria	***No/ Not available***	***Yes/ Feature available***	***No/ Not available***	***Yes/ Feature available***
Usability:				
1) Does the site use the CT.gov template?	13	52	20.0%	80.0%
2) Is the homepage shorter than 2 visible pages?	7	58	10.8%	89.2%
3) Is there a link to a site map on the homepage?	48	17	73.8%	26.2%
4) Is there an internal search tool?	2	63	3.1%	96.9%
5) Any foreign language accessibility?	47	18	72.3%	27.7%
6) Does the homepage clearly indicate when it was last updated?	2	63	3.1%	96.9%
7) Is there a "help" link?	62	3	95.4%	4.6%
8) Is there a "home" link to get back to the agency homepage?	0	65	0.0%	100.0%
9) Is there a link to the state homepage?	1	64	1.5%	98.5%
10) Is there evidence of mobile technology optimization?	65	0	100.0%	0.0%
Privacy/Security:				
11) Is there a link to the privacy policy on the homepage?	5	60	7.7%	92.3%
12) Does the privacy policy link to the state privacy policy?	10	55	15.4%	84.6%
13) Is there a link to the security policy on the homepage?	7	58	10.8%	89.2%
14) Is there a link to a disability/accessibility policy on the homepage?	51	14	78.5%	21.5%
Contact and Participation:				
15) Is there a "contact" link on the homepage?	1	64	1.5%	98.5%
Does the contact link include a:	-	-	-	-
16) phone number	1	64	1.5%	98.5%
17) physical address	1	64	1.5%	98.5%
18) Is there a contact for the webmaster?	20	45	30.8%	69.2%
19) Is there an email contact for the department?	7	58	10.8%	89.2%
20) Is there a place to post comments (blog, bulletin board)?	61	4	93.8%	6.2%
21) Is there an online survey/poll?			100.0%	0.0%
22) Are there customized views available?	64	1	98.5%	1.5%

Content:				
23) Are regulations available online?	30	35	46.2%	53.8%
24) Is there an online database available?	26	39	40.0%	60.0%
a. Is there a searchable or customizable database	37	28	56.9%	43.1%
25) Are there commercial ads?	65	0	100.0%	0.0%
26) Are there audio clips?	50	15	76.9%	23.1%
27) Are there video clips?	44	21	67.7%	32.3%
28) Are there relevant external links?	5	60	7.7%	92.3%
a. categorize external links by:	-	-	-	-
i. other CT state agency	7	58	10.8%	89.2%
ii. federal agency	24	41	36.9%	63.1%
iii. Municipality	50	15	76.9%	23.1%
iv. other	14	51	21.5%	78.5%
29) Are there online publications?	3	62	4.6%	95.4%
30) Is there online documentation of offline events (i.e., minutes, agendas, more than just meeting schedule/place)?	15	50	21.9%	78.1%
31) Is there a reference to enabling statute?	23	42	35.4%	64.6%
32) Is there a mission statement?	8	57	12.3%	87.7%
33) Is there a calendar of events?	28	37	43.1%	56.9%
34) Is there a link to a FAQ?	29	36	44.6%	55.4%
a. Is there a searchable or customizable FAQ	57	8	87.7%	12.3%
35) Is there a human resources or personnel link?	26	39	40.0%	60.0%
36) Are automatic updates available? (sign up for newsletter, RSS feeds, etc.)	22	43	33.8%	66.2%
37) Does the site link to an agency facebook page?	56	9	86.2%	13.8%
38) Does the site advertise use of twitter?	58	7	89.2%	10.8%
39) Are there premiums (fees) for enhanced access/features or additional online content?	64	1	98.4%	1.6%
40) Does the website offer downloadable forms?	9	56	13.8%	86.2%
41) Is there one or more online service(s)?	36	29	54.7%	45.3%
42) Are there any financial transactions?	52	13	78.0%	22.0%
43) For financial transactions, can a credit card be used?	57	8	85.7%	14.3%
44) For financial transactions, is there a separate user fee?	64	1	98.1%	1.9%
Source: PRI analysis				

Appendix D

Survey Methodology

The website address inventory (Appendix C) was used as the basis for both the agency survey and the agency website evaluation, however only 57 executive branch agencies were deemed eligible for the survey. Table D-1 shows the reasons certain entities were not surveyed and the number of entities falling into each exemption category.

Table D-1. Executive Entities Not Surveyed	
Reason for not surveying	***Number in category***
Constitutional Offices	6
Higher Education Institutes	6
Survey not relevant	6
Source: PRI Analysis	

Of 57 agencies surveyed, 51 provided responses for a 89 percent response rate. Despite repeated invitations to participate, six agencies did not respond. The non-responding agencies are listed in table D-2.

Table D-2. Executive Entities Not Responding to Survey
Commission for Educational Technology
Commission on Deaf and Hearing Impaired
Department of Revenue Services
Department of Transportation
Department of Veterans' Affairs
Office of the Victim Advocate
Source: PRI Analysis

The full list of questions and a summary of results is available below:

1. Agency and Survey Participant Information

	Response Percent	Response Count
Name of agency	100.0%	50
Name of primary survey respondent	96.0%	48
Title of primary survey respondent	96.0%	48
Phone number of primary survey respondent	96.0%	48
Email address of primary survey respondent	96.0%	48
Name(s) and title(s) of other persons collaborating on survey responses	64.0%	32
answered question		50
skipped question		1

Agency E-Government Survey 2010

SurveyMonkey

1. Agency and Survey Participant Information

	Response Percent	Response Count
Name of agency	100.0%	50
Name of primary survey respondent	96.0%	48
Title of primary survey respondent	96.0%	48
Phone number of primary survey respondent	96.0%	48
Email address of primary survey respondent	96.0%	48
Name(s) and title(s) of other persons collaborating on survey responses	64.0%	32
answered question		50
skipped question		1

2. Does the agency's business plan contain a formal online strategy?

	Response Percent	Response Count
Agency does not have a business plan	34.0%	17
No	**36.0%**	**18**
Yes	32.0%	16
	answered question	**50**
	skipped question	**1**

3. Is the agency's business plan available online?

	Response Percent	Response Count
No	**83.7%**	**41**
Yes *(provide web address below)*	16.3%	8
	Business Plan Web Address	12
	answered question	**49**
	skipped question	**2**

4. What online initiatives would be most useful to the agency in the next two years? *(Write up to 3)*

	Response Percent	Response Count
a	100.0%	44
b	68.2%	30
c	47.7%	21
answered question		44
skipped question		7

5. What online initiatives does the agency intend to implement in the next two years? *(Write up to 3)*

	Response Percent	Response Count
a	100.0%	43
b	65.1%	28
c	34.9%	15
answered question		43
skipped question		8

6. Which of the following has the agency considered for use? *(Check all that apply)*

	Response Percent	Response Count
Mobile/smart phone optimized website	27.5%	14
Mobile/smart phone app	23.5%	12
Social networking applications (e.g., facebook, twitter)	**56.9%**	**29**
RSS feeds	41.2%	21
None of the above	37.3%	19
Other (please specify)		3
answered question		**51**
skipped question		**0**

7. Rate the impact of the following components on implementation of the agency's web-related IT projects.

	Negative Impact	Slight Negative Impact	No Impact	Slight Positive Impact	Positive Impact	Not Applicable	Response Count
Agency-to-agency collaboration	0.0% (0)	4.3% (2)	17.0% (8)	12.8% (6)	**38.3% (18)**	27.7% (13)	47
Funding	**28.6% (14)**	20.4% (10)	10.2% (5)	2.0% (1)	22.4% (11)	16.3% (8)	49
Interoperability of agency systems and data	12.5% (6)	20.8% (10)	14.6% (7)	6.3% (3)	**22.9% (11)**	**22.9% (11)**	48
IT personnel on project	12.5% (6)	8.3% (4)	14.6% (7)	8.3% (4)	**33.3% (16)**	22.9% (11)	48
Limited use or need for new projects	4.3% (2)	10.6% (5)	29.8% (14)	4.3% (2)	6.4% (3)	**44.7% (21)**	47
Program personnel on project	8.3% (4)	12.5% (6)	16.7% (8)	6.3% (3)	**33.3% (16)**	22.9% (11)	48
Training on use of technology	10.4% (5)	14.6% (7)	14.6% (7)	4.2% (2)	**39.6% (19)**	16.7% (8)	48
						answered question	**49**
						skipped question	**2**

8. Describe the level of responsibility for planning and/or developing agency web projects for the following groups:

	No	Little	Much	Full	Not Applicable	Response Count
Agency Personnel	0.0% (0)	4.0% (2)	32.0% (16)	**54.0% (27)**	10.0% (5)	50
DOIT Personnel	10.0% (5)	**54.0% (27)**	24.0% (12)	2.0% (1)	10.0% (5)	50
Private Consultants	26.0% (13)	16.0% (8)	**32.0% (16)**	6.0% (3)	20.0% (10)	50
					answered question	**50**
					skipped question	**1**

9. Describe the level of responsibility for implementing and/or maintaining agency web projects for the following groups:

	No	Little	Much	Full	Not Applicable	Response Count
Agency Personnel	0.0% (0)	6.0% (3)	28.0% (14)	**56.0% (28)**	10.0% (5)	50
DOIT Personnel	8.0% (4)	**60.0% (30)**	16.0% (8)	6.0% (3)	10.0% (5)	50
Private Consultants	26.5% (13)	**30.6% (15)**	16.3% (8)	6.1% (3)	20.4% (10)	49
					answered question	**50**
					skipped question	**1**

10. In your opinion, what type of entity should have primary responsibility for the listed functions?

	Central IT Authority	Statewide Policy and Planning Agency	Individual Agencies	Interagency Council	Other	Not Necessary	Response Count
Software training for agency personnel	38.8% (19)	8.2% (4)	**44.9% (22)**	2.0% (1)	0.0% (0)	6.1% (3)	49
Porting agency content (e.g., developing mobile applications)	**42.9% (21)**	10.2% (5)	28.6% (14)	8.2% (4)	0.0% (0)	10.2% (5)	49
Creating data-sharing standards/best practices/ protocols	**32.7% (16)**	26.5% (13)	10.2% (5)	24.5% (12)	0.0% (0)	6.1% (3)	49
Monitoring web traffic and providing feedback to agency	**52.0% (26)**	6.0% (3)	38.0% (19)	0.0% (0)	0.0% (0)	4.0% (2)	50
Determining use/adoption of emerging technologies (e.g., social networking)	22.0% (11)	24.0% (12)	**28.0% (14)**	20.0% (10)	0.0% (0)	6.0% (3)	50
						answered question	**50**
						skipped question	**1**

11. In 2008, Governor Rell issued Executive Order No. 19 which, in part, called for the creation of a System Development Methodology (SDM) for IT projects. Since the SDM was instituted, the Department of Information Technology (DOIT) facilitates formal reviews of many agency IT projects. Rate the impact of the SDM on web project implementation:

	Negative Impact	Slight Negative Impact	No Impact	Slight Positive Impact	Positive Impact	Not Applicable	Response Count
Projects come in on budget	8.2% (4)	12.2% (6)	18.4% (9)	8.2% (4)	2.0% (1)	**51.0% (25)**	49
Projects are finished on time	14.3% (7)	16.3% (8)	6.1% (3)	12.2% (6)	2.0% (1)	**49.0% (24)**	49
Projects achieve the desired outcome	2.0% (1)	6.1% (3)	16.3% (8)	14.3% (7)	8.2% (4)	**53.1% (26)**	49
Collaboration with DOIT	8.2% (4)	16.3% (8)	10.2% (5)	14.3% (7)	10.2% (5)	**40.8% (20)**	49
Collaboration with other state agencies (non-DOIT)	0.0% (0)	0.0% (0)	14.3% (7)	12.2% (6)	12.2% (6)	**61.2% (30)**	49
						answered question	**49**
						skipped question	**2**

12. Is the agency a partner on any interagency web-functions (e.g., shared database of professional licenses)?

	Response Percent	Response Count
No	**63.3%**	**31**
Yes	36.7%	18
If yes, give one example and list the collaborating agencies.		18
answered question		**49**
skipped question		**2**

13. Are aspects of the agency's website mandated by federal requirements (e.g., informational postings, specific applications/systems)?

	Response Percent	Response Count
No	**67.3%**	**33**
Yes	32.7%	16
If yes, summarize the federal requirements.		15
answered question		**49**
skipped question		**2**

14. How does the agency's website facilitate interaction with municipalities? *(Check all that apply)*

	Response Percent	Response Count
Links to municipal websites (e.g., programs, regulations, or guidelines)	22.7%	10
List of municipal contacts	18.2%	8
Municipalities can download agency databases	15.9%	7
Municipalities share a common database with the agency	4.5%	2
Not Applicable	**61.4%**	**27**
	Other (please describe)	10
	answered question	**44**
	skipped question	**7**

15. Beyond using the DOIT-established web template, identify who is responsible for the listed aspects of the agency's website. *(Check all that apply)*

	Agency Leadership	Communications or Planning Office	Program Personnel	IT Personnel	Internal Web Group	Private Consultants	Other	Response Count
Content	**78.4% (40)**	37.3% (19)	45.1% (23)	21.6% (11)	17.6% (9)	0.0% (0)	9.8% (5)	51
Site layout	**52.9% (27)**	35.3% (18)	13.7% (7)	41.2% (21)	19.6% (10)	2.0% (1)	5.9% (3)	51
Navigation	43.1% (22)	31.4% (16)	11.8% (6)	**45.1% (23)**	21.6% (11)	2.0% (1)	5.9% (3)	51
							answered question	**51**
							skipped question	**0**

16. For each of the areas listed below, indicate which personnel type(s) have responsibility in developing or publishing agency website content. *(Check all that apply)*

	Agency Leadership	Communications or Planning Office	Program Personnel	IT Personnel	Internal Web Group	Private Consultants	Other	Response Count
Contact/directory information	**47.1% (24)**	33.3% (17)	33.3% (17)	29.4% (15)	19.6% (10)	0.0% (0)	5.9% (3)	51
News/press releases	**60.8% (31)**	45.1% (23)	25.5% (13)	19.6% (10)	17.6% (9)	0.0% (0)	3.9% (2)	51
Informational status updates/advisories	**62.7% (32)**	35.3% (18)	35.3% (18)	25.5% (13)	23.5% (12)	0.0% (0)	5.9% (3)	51
Consumer guides/guidelines	**53.2% (25)**	27.7% (13)	46.8% (22)	23.4% (11)	19.1% (9)	0.0% (0)	6.4% (3)	47
Agency regulations	**66.7% (32)**	25.0% (12)	37.5% (18)	22.9% (11)	20.8% (10)	0.0% (0)	4.2% (2)	48
Agency policy documents	**67.3% (33)**	28.6% (14)	38.8% (19)	28.6% (14)	20.4% (10)	0.0% (0)	4.1% (2)	49
Forms/applications	**56.3% (27)**	29.2% (14)	45.8% (22)	29.2% (14)	22.9% (11)	0.0% (0)	4.2% (2)	48
							answered question	**51**
							skipped question	**0**

17. In the table below, indicate the frequency with which the following aspects of the agency's website are updated.

	Daily	Weekly	Monthly	Quarterly	Yearly or longer	Not Applicable	Response Count
Site layout	3.9% (2)	5.9% (3)	9.8% (5)	7.8% (4)	**64.7% (33)**	7.8% (4)	51
Navigation	3.9% (2)	9.8% (5)	13.7% (7)	17.6% (9)	**45.1% (23)**	9.8% (5)	51
Contact/directory information	10.0% (5)	10.0% (5)	**38.0% (19)**	18.0% (9)	16.0% (8)	8.0% (4)	50
News/press releases	**33.3% (17)**	25.5% (13)	21.6% (11)	7.8% (4)	0.0% (0)	11.8% (6)	51
Informational status updates/advisories	**42.0% (21)**	26.0% (13)	16.0% (8)	6.0% (3)	4.0% (2)	6.0% (3)	50
Consumer guides/guidelines	10.4% (5)	10.4% (5)	**25.0% (12)**	20.8% (10)	10.4% (5)	22.9% (11)	48
Agency regulations	8.0% (4)	0.0% (0)	12.0% (6)	16.0% (8)	**42.0% (21)**	22.0% (11)	50
Agency policy documents	8.0% (4)	4.0% (2)	16.0% (8)	22.0% (11)	**34.0% (17)**	16.0% (8)	50
Forms/applications	8.2% (4)	6.1% (3)	18.4% (9)	**34.7% (17)**	24.5% (12)	8.2% (4)	49
						answered question	**51**
						skipped question	**0**

18. Please describe how the agency markets its web services (e.g., fliers included in mailings, newspaper ads, radio or tv ads). *(If the agency does not market its web services, please write "no marketing" in the space provided.)*

	Response Count
	49
answered question	49
skipped question	2

19. Does the agency review web traffic statistics (e.g., page visits, unique visitors)?

	Response Percent	Response Count
Yes	58.8%	30
No	41.2%	21
answered question		51
skipped question		0

20. What is the time frame for the most recent set of web traffic statistics?

	Response Percent	Response Count
FY 2010	60.7%	17
Other *(provide below)*	39.3%	11
Alternate time frame		13
answered question		28
skipped question		23

21. For the time frame indicated above, provide the following statistics:

	Response Average	Response Total	Response Count
Page views	**4,851,714.10**	**101,885,996**	21
Unique visitors	1,127,171.89	21,416,266	19
Use of specific applications (e.g., directory lookups, paid transactions)	95,265.36	1,047,919	11
User logins (i.e., the user has a unique login or identifier that allows them to access information)	6,623.80	66,238	10
		answered question	**21**
		skipped question	**30**

22. How often does the agency review web traffic statistics?

	Response Percent	Response Count
Daily	0.0%	0
Weekly	9.7%	3
Monthly	29.0%	9
Quarterly	22.6%	7
Yearly or longer	**38.7%**	**12**
	Other *(please specify)*	17
	answered question	**31**
	skipped question	**20**

23. Briefly describe how the agency uses the information obtained from web traffic statistics.

	Response Count
	42
answered question	**42**
skipped question	**9**

24. Does the agency receive feedback via the website (i.e., via a "Send Feedback" link) specific to the agency website (e.g., functionality, navigation, accessibility, etc.)?

	Response Percent	Response Count
Yes	43.8%	21
No	56.3%	27
If yes, how many feedback submissions per month?		19
answered question		48
skipped question		3

25. Does the agency have a written policy for responding to feedback on the agency website (i.e., functionality , navigation, accessibility, etc.)?

	Response Percent	Response Count
Yes	4.2%	2
No	95.8%	46
answered question		48
skipped question		3

26. Indicate the number of financial transactions conducted in FY 2010, both online and in total (i.e., online, in person, via mail, etc.). *(If no financial transactions are conducted online, write "0")*

	Response Average	Response Total	Response Count
Online	102,635.66	4,208,062	41
In Total	**592,453.53**	**21,328,327**	36
		answered question	**43**
		skipped question	**8**

27. For all agency interactions (e.g., via web, in person, via mail, via telephone), estimate the percentage that occur with the following groups. *(Percentages should sum to 100%)*

	Response Average	Response Total	Response Count
Businesses/professionals	31.70	1,268	40
Private citizens/individuals	**41.88**	**1,759**	42
Other government agencies/offices/officials	29.33	1,173	40
		answered question	**42**
		skipped question	**9**

28. For interactions with businesses or professionals, estimate the percentage that occur via the web.

	Response Percent	Response Count
0-10%	35.7%	15
11-40%	35.7%	15
41-60%	11.9%	5
61-90%	9.5%	4
91-100%	7.1%	3
answered question		42
skipped question		9

29. For interactions with private citizens or individuals, estimate the percentage that occur via the web.

	Response Percent	Response Count
0-10%	**34.9%**	**15**
11-40%	**34.9%**	**15**
41-60%	14.0%	6
61-90%	9.3%	4
91-100%	7.0%	3
	answered question	**43**
	skipped question	**8**

30. For interactions with government agencies, offices, or officials, estimate the percentage that occur via the web.

	Response Percent	Response Count
0-10%	44.2%	19
11-40%	32.6%	14
41-60%	9.3%	4
61-90%	11.6%	5
91-100%	2.3%	1
answered question		43
skipped question		8

31. Estimate the frequency of use by constituents (i.e., citizens, businesses, professionals) of the following web features:

	Daily	Weekly	Monthly	Quarterly	Yearly or longer	Feature not available	Response Count
Contact/directory information	**57.1% (28)**	14.3% (7)	10.2% (5)	2.0% (1)	0.0% (0)	16.3% (8)	49
News/press releases	**55.1% (27)**	4.1% (2)	16.3% (8)	6.1% (3)	2.0% (1)	16.3% (8)	49
Informational status updates/advisories	**51.0% (25)**	16.3% (8)	10.2% (5)	4.1% (2)	4.1% (2)	14.3% (7)	49
Consumer guides/guidelines	**39.1% (18)**	17.4% (8)	15.2% (7)	2.2% (1)	2.2% (1)	23.9% (11)	46
Agency regulations	**27.7% (13)**	14.9% (7)	4.3% (2)	10.6% (5)	14.9% (7)	**27.7% (13)**	47
Agency policy documents	**34.0% (16)**	10.6% (5)	10.6% (5)	12.8% (6)	10.6% (5)	21.3% (10)	47
Forms/applications	**48.9% (23)**	23.4% (11)	4.3% (2)	2.1% (1)	6.4% (3)	14.9% (7)	47
Agency specific login/username	21.7% (10)	6.5% (3)	2.2% (1)	4.3% (2)	2.2% (1)	**63.0% (29)**	46
Interagency login/username	18.2% (8)	6.8% (3)	4.5% (2)	2.3% (1)	2.3% (1)	**65.9% (29)**	44
Database of information (besides contact information)	**44.7% (21)**	14.9% (7)	4.3% (2)	2.1% (1)	2.1% (1)	31.9% (15)	47
Process lookup /status functions (e.g., where's my permit?)	27.7% (13)	6.4% (3)	0.0% (0)	2.1% (1)	0.0% (0)	**63.8% (30)**	47
						answered question	**49**
						skipped question	**2**

32. Estimate the frequency of use by government employees (e.g., agency personnel, other state employees, municipal officials, federal officials) of the following web features:

	Daily	Weekly	Monthly	Quarterly	Yearly or longer	Feature not available	Response Count
Contact/directory information	**59.2% (29)**	8.2% (4)	12.2% (6)	0.0% (0)	4.1% (2)	16.3% (8)	49
News/press releases	**53.1% (26)**	10.2% (5)	8.2% (4)	6.1% (3)	6.1% (3)	16.3% (8)	49
Informational status updates/advisories	**51.0% (25)**	12.2% (6)	10.2% (5)	6.1% (3)	6.1% (3)	14.3% (7)	49
Consumer guides/guidelines	**43.5% (20)**	8.7% (4)	6.5% (3)	6.5% (3)	13.0% (6)	21.7% (10)	46
Agency regulations	**35.6% (16)**	2.2% (1)	11.1% (5)	8.9% (4)	13.3% (6)	28.9% (13)	45
Agency policy documents	**40.4% (19)**	10.6% (5)	8.5% (4)	10.6% (5)	8.5% (4)	21.3% (10)	47
Forms/applications	**48.9% (23)**	14.9% (7)	10.6% (5)	4.3% (2)	6.4% (3)	14.9% (7)	47
Agency specific login/username	24.4% (11)	4.4% (2)	6.7% (3)	0.0% (0)	2.2% (1)	**62.2% (28)**	45
Interagency login/username	28.9% (13)	4.4% (2)	6.7% (3)	0.0% (0)	0.0% (0)	**60.0% (27)**	45
Database of information (besides contact information)	**41.3% (19)**	13.0% (6)	6.5% (3)	4.3% (2)	0.0% (0)	34.8% (16)	46
Process lookup /status functions (e.g., where's my permit?)	25.5% (12)	2.1% (1)	4.3% (2)	2.1% (1)	0.0% (0)	**66.0% (31)**	47
						answered question	**49**
						skipped question	**2**

Appendix E

Connecticut's Information Technology Management History

Connecticut has used data management and information technology techniques in some form for over 30 years. Discussions on the proper organization and management of information technology have focused on two issues: 1) centralization of data and services and 2) the merits of public or private management, oversight, and operation of technology systems.

Connecticut has made changes to the statewide technology support structure. Beginning in 1986, the legislature created the Office of Information and Technology (OIT) within the Office of Policy and Management (OPM).[41] In 1989, the authority of OIT was increased to allow the office to enact strategic planning, common standards, and expenditure control.[42] As indicated in the March 1992 Final Report by the Commission to Effect Government Reorganization, the problems that OIT was given authority to address included:

- increasing expenditures;
- imperfect accountability;
- inability of existing systems to meet new demands;
- difficulty in access and sharing data;
- inconsistent data definitions/uneven integrity;
- lack of interoperability of applications;
- limited interconnectivity of hardware; and
- shortage of trained personnel to manage this effort.

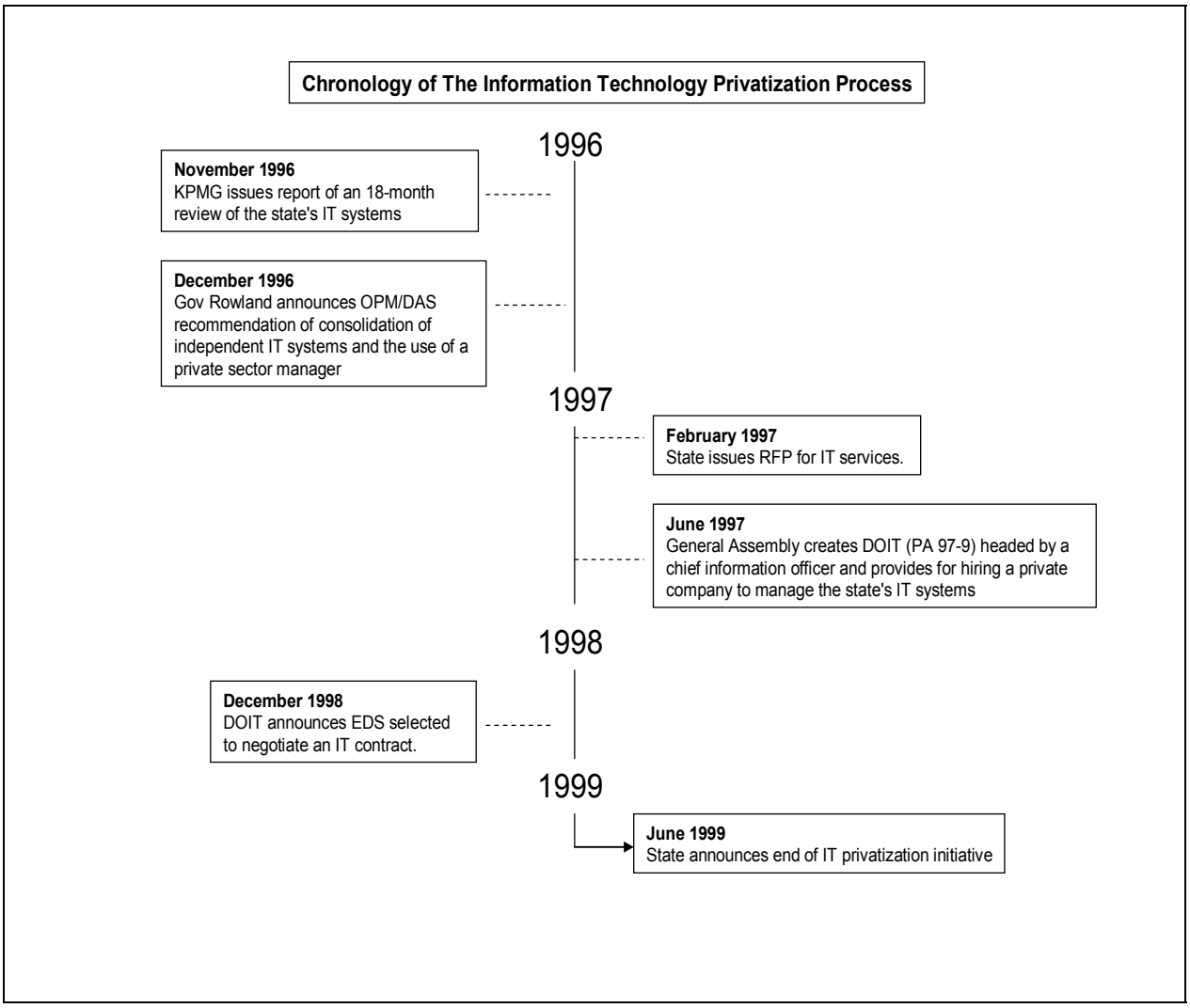
While OIT reportedly made progress in several of these areas in the early 1990's, in 1992 there were still 11 distinct data centers used by the state. The largest data center housed approximately one-quarter of the state's data processing capabilities and was run by the Bureau of General and Technical Services (BGTS) through the Department of Administrative Services.

Throughout the 1990's, discussion about the need for centralization of IT services continued. Separate studies by the Thomas Commission[43], Hull-Harper Commission[44], and a report by KPMG commissioned by OPM[45] suggested that a number of issues could be partially or fully fixed by a centralized IT authority. The KPMG study, in particular, suggested that not only should the state's IT needs be serviced by a central authority, but that the service provider should be a contracted private entity that reported to an IT oversight agency.

41 Public Act 86-292
42 P.A. 89-257
43 1991 Thomas Commission
44 Hull-Harper Commission 1992
45 1996 KPMG Study

IT Privatization Efforts

The figure below provides a chronological overview of Connecticut's privatization efforts for information technology. As the figure shows, the privatization effort was initiated by the Rowland administration after KPMG Peat Marwick issued a 1996 report assessing the state's information technology capabilities. As noted above, the KPMG report was commissioned by the Office of Policy and Management after previous commissions had reviewed the IT function and proposed management and organizational changes.46



46Under the direction of the Rowland administration, the Office of Policy and Management (OPM) hired KPMG Peat Marwick to conduct a study of the state's information technology systems in 1995. Previous groups had already examined the state's IT needs and organizations. The 1990 Commission to Study the Management of State Government (the Thomas Commission) and the 1991-92 Commission to Effect Government Reorganization (the Hull-Harper Commission) made IT recommendations, many of which were implemented.

The KPMG report proposed recommendations on organization, strategic alignment, and management practices. The report found that the state's IT management was decentralized, inefficient, expensive, and unable to keep up with evolving technological developments. KPMG proposed (1) appointing a chief information officer (CIO) with clear responsibility for all information technology services, (2) combining the Office of Information Technology (formerly within OPM) with the Department of Administrative Services' (DAS) Bureau of Technical Services, (3) requiring each agency to have a business planning process and creating an overall management information system strategic planning process, (4) developing ways to identify technological opportunities as well as performance measures, and (5) establishing a plan for disaster recovery and business continuity in the event of system failure.

In December 1996, former Governor Rowland announced the conclusions of the KPMG study recommending consolidation of information technology systems and the use of a private sector manager. The Rowland administration began the IT privatization effort in February 1997, prior to the creation of DOIT, when the state issued a RFP through the Department of Administrative Services. The schedule included opportunities for bidders to develop their proposals and for the state to evaluate them.

During the 1997 legislative session, legislation was introduced that would combine the IT functions of OPM's OIT and DAS's BGTS into one oversight agency, the Department of Information Technology (DOIT). The legislation was supported by then Governor Rowland and a Project Manager at OIT, Gregg "Rock" Regan.

Legislative debate about the consolidation of IT functions focused on two key areas: privatization of IT services and the role of and minimum qualifications for the Chief Information Officer (CIO), who would head the newly-formed DOIT. Minimum qualifications for the CIO were debated as part of the enabling legislation, but were not ultimately adopted.

Support for privatization of IT functions was primarily based on estimates of up to $50 million annual savings and provisions for current state IT personnel to be trained and offered private sector employment. DOIT would serve as a broker and coordinator between state agency IT needs and the private contractors who would carry out the necessary functions.

Ultimately, the enabling legislation was included in an emergency certified bill[47] and DOIT was created. Shortly thereafter, Regan was named as the state's first CIO and was charged with the task of setting up DOIT and overseeing a request for proposal for the privatization of the state's IT services.

As part of the RFP for statewide IT services, vendors were asked to submit their best and final offer in February 1998. By the end of 1998, Chief Information Officer Regan stated that the department would enter into contract negotiations with Electronic Data Systems (EDS) Corporation of Texas. EDS was selected from among the final proposals submitted by International Business Machines (IBM), Computer Sciences Corporation (CSC), and the

47 H.B. 8006

Connecticut State Employees Association (CSEA). At the time, Connecticut was the subject of national attention as the first state that would completely privatize IT functions.[48]

Under the privatization initiative, DOIT announced that state employees would be transfer to EDS. The original RFP and contract negotiations included components addressing the status of state government IT workers. The Connecticut State Employees Association (CSEA), which represents many state employees, publicly opposed both the privatization initiative and the contract award to EDS. CSEA expressed skepticism over benefits of privatization and job guarantee as well as the available alternatives if the private company failed to deliver under the terms of the contract.

Through a series of public and special acts, the legislature created oversight procedures for the privatization contract process. DOIT was statutorily required to submit the contract to the Auditors of Public Accounts who would review it within 75 days. The auditors' independent evaluation would determine whether the contract served the state's best interests in regards to efficiency, economy, contractor qualifications, and effective service delivery. The findings would be reported to the General Assembly. The Appropriations and Government Administration and Elections committees would review it. The contract would take effect automatically 45 days after submission to the General Assembly, unless a three-fifths vote of the either house of the legislature rejected it.

During the summer of 1999, negotiations halted based partly on concerns about cost controls in the 7-year contract, an estimated $1.4 billion, and opposition from public employees union and several elected officials. On June 29, 1999, the agency publicly announced that it had terminated negotiations with the preferred bidder without reaching an agreement and would not proceed further with the IT privatization initiative. The newly-appointed CIO decided to provide IT functions with state employees and resources and to structure DOIT in a similar manner to the private companies that had bid for the state's IT contract.

The altered DOIT strategy included consolidating the state's IT personnel into one agency. The shifting of personnel was to happen in a series of phases, beginning with the state's IT managers. However, for a variety of reasons, both logistical and political, the centralization of IT personnel stalled out after the statewide IT managers were reallocated from various agencies to DOIT. In addition, some IT managers were assigned to the central DOIT office, while others remained physically located in individual agencies. Rank and file staff remained under the purview of the agency commissioner.

48 Field, Tom. "Connecticut Antes Up." CIO.com April 1, 1999: 33-36.

Appendix F

Major Ongoing E-Government Initiatives

Over the years, Connecticut has increased the amount of government information and services online for citizens and businesses. The following discussion provides an overview of e-government efforts the state has undertaken with varying levels of success in the areas of economic development and within the judicial system. Also, three examples of major on-going e-government projects are described in more detail.

Economic Development

Since the 1990s, there have been a number of initiatives involving a "one-stop" approach for business professionals and economic development projects. Beginning with former Governor Weicker, efforts were started to establish a customer service center for businesses. In October 1997, then Governor Rowland proposed a new state initiative to establish a single place to accept applications for all businesses and professions. This program, known as the High Efficiency Licensing Program (HELP), was intended to allow business owners as well as individuals to complete and submit one master application and pay all fees with one check for all business and professional licensing needs.

While the HELP program was not fully implemented, a public-private partnership with the Connecticut Economic Resource Center (CERC) has resulted in an online customer service center for business known as the Connecticut Licensing Information Center (CT-CLIC.com). This website assists users who are looking to start, purchase, expand or relocate a business in Connecticut with information on the various licensing and registration requirements. The website also provides visitors with resources and information to obtain trade, occupational, recreational and personal licenses. However, as noted, full implementation of a "one-stop" website for businesses has yet to occur.

Connecticut Judicial System

Connecticut has also made progress in providing government information and services to professionals and the public in the judicial system. In the late 1990s, the chief court administrator began efforts to upgrade the website for the judicial branch. Through a working group of representatives from each judicial administrative unit along with Legal Services and technology support staff, the judicial branch has developed and implemented many e-services for legal professionals and the general public. This working group, known as the judicial branch's web board, is responsible for reviewing website content, ensuring adequate site navigation, and enabling users to conduct business transactions online.

In 2007, Chief Justice Rogers established the Public Service and Trust Commission to develop a strategic plan to further improve the services offered to public, particularly those offered through the judicial branch website. After receiving a substantial amount of input from the users of the court, the commission prepared a strategic plan that was approved by the Chief Justice in June 2008. The web board is charged with implementation of the plan, and provides

quarterly status reports to the commission. The reports describe accomplishments but also outline specific obstacles to implementing the recommendations. (A listing of some of the judicial web-based projects underway, as part of the judicial strategic plan, is provided at the end of this appendix.)

E-GOVERNMENT CASE EXAMPLES

There are a number of factors impacting the successful development of e-government initiatives. These include leadership on initiating efforts, accurately assessing need and technical capabilities, adequate project management, and continued commitment to provide necessary resources. Below are descriptions of three recent and continuing e-government efforts:

- **Modernization Project for the Department of Motor Vehicles (DMV)**
  - involves the upgrade of a single agency with a large cross-section of clients (e.g., dealers, insurers, public safety personnel, and individual citizens);

- **E-Licensing project for the Department of Public Health, Department of Consumer Protection and others**
  - establishes a common platform for a number of state agencies to use for their own individual purposes; and

- **Connecticut Criminal Justice Information Sharing System (CJIS)**
  - brings together different levels and branches of government to accomplish a common goal – a comprehensive criminal justice information system.

The program review staff chose these projects as examples to illustrate the diverse nature of e-government initiatives. The case examples provide insight into the different challenges faced and solutions used by each project initiative. Although there are certain commonalities among the projects (e.g., an assessment of the existing environment prior to implementation), the project descriptions vary as the individual project's experiences and circumstances have been unique. For instance, the initiation and implementation of each project have been approached differently. One project is the result of a direct legislative mandate (CJIS), another was initially self-directed (DMV), and the third (E-Licensing) was an opportunity discovered.

Each case example also highlights certain recurring obstacles that many e-government projects may encounter. Some of the project challenges include interoperability or the ability of diverse systems to work together (CJIS), the condition of the underlying data required for certain applications (DMV), and recognizing and communicating common needs among agencies (E-Licensing).

In all cases, necessary project components are collaboration of state agencies, identification and incorporation of user input, and adoption of a development and implementation plan to allow for re-assessment when necessary, such as is accomplished through the system development methodology. Finally, periodic reporting requirements are critical to keep all interested stakeholders informed on progress.

Connecticut Department of Motor Vehicles (DMV)

The Connecticut Department of Motor Vehicles is currently implementing a wide ranging project, the DMV Modernization Program. Full implementation of the modernization program, at a cost of approximately $26.9 million, will modify the public face of the agency, the agency website. Beyond changing the public interface, the project is also re-examining and repurposing existing agency resources through fundamental changes to the group's organizational structure, and using technology to leverage those resources for better outcomes.

The primary technological solution, and the largest component, for the modernization project involves customizing, implementing, and integrating the newly designed Connecticut Integrated Vehicle and Licensing System (CIVLS). CIVLS is the agency-wide IT platform that will streamline processes within the agency. IT is expected to improve interactions with both other agencies and the public, through more efficient data use and sharing.

DMV organization and technology. The Department of Motor Vehicles is a large agency with a broad clientele base that includes individual citizen drivers, commercial drivers, motor vehicle dealerships, other state agencies, and officials from other levels of government. Due to the varied nature of transactions and clientele, as well as to the slow evolution of agency roles and duties, the agency was organized as a series of silos. This silo structure was largely responsible for agency-wide inefficiencies. Additionally, the agency's IT structure relied heavily on outdated systems, many of which were incapable of communicating with other systems within the agency.

To help illustrate some of the inefficiencies, the path of a widely used agency form was tracked. The circuitous path included many stops before the case it dealt with was closed. Each stop contributed to delays in service and introduced a higher likelihood of input errors, as the information had to be entered into several independent databases – each of which would have to be updated if any changes to the form's content were necessary. As part of a larger evaluation of the agency's effectiveness that began in 2006, the existing situation was deemed unacceptable, as there were unsatisfactory outcomes (i.e., frustration, wasted time) for all of the various clientele groups as well as the agency personnel.

The overall evaluation, conducted by DMV with outside consultants, helped identify needs for specific public and business web functions that were not available online. More importantly, the study found that implementing individual functions by modifying the current IT system would be extremely inefficient in both scheduling and funding. Instead, the DMV IT project was identified as one piece of a larger revision of the agency's overall business plan and organizational structure.

Expected benefits of the modernization program. When fully implemented, CIVLS will redesign several sets of agency interactions, including making individual access more customized and personal. One of the primary outcomes of the modernization effort will be to allow more transactions to be both initiated and completed online (i.e., a client will not need to send or receive hard copies of transaction documentation after performing an online transaction). If a transaction that is initiated online includes a component that must be dealt with in person, the

overall transaction will pause at the appropriate stopping point online, then resume where the physical visit is necessary, rather than needing to be completely restarted in person.

Elimination of registration stickers. One of the notable functionality improvements that has already been put into operation is the agency's new sticker-less registration program. Eliminating the need for window stickers helps reduce mailing and production costs, as no physical sticker has to be mailed to a registrant following online registration renewal. Additionally, officials who need to have the ability to check for proper registration (i.e., municipal and state police) will have instant access to the registration database based on license information. Similarly, registrants can find registration expiration information through the newly released online verification system.

Lead-through processing. Another major improvement will be "lead-through processing", which will be included in most online transactions. Lead-through processing may be thought of as an interactive manual to help inform clientele and agency personnel about what needs to happen to achieve the desired outcome (e.g., obtain a license or registration). With lead-through processing, instructions on how to fill out forms, as well as what information is necessary, will be included as a piece of the interactive website. If a person wants to purchase specialized plates, the instructions to do so will be clearly posted as part of the application process.

Lead-through processing, among other parts of CIVLS, may help increase the effectiveness of agency personnel. A step-by-step online system should reduce the need for specialized personnel training because instructions for specific or uncommon transactions will be available as applications are processed. This may also help reduce delays that occur due to insufficient staff being trained on such transactions. Making instructions available equally to both clients and personnel will also increase agency transparency.

Dealership interaction. Dealerships are a vital part of the agency's registration and titling operation. When a car is sold, a dealer is currently able to electronically submit the necessary forms to indicate the change in title or registration. However, there are many restrictions on car registration and there is often a significant lag (frequently six weeks or more) between when a car is purchased and when the final registration paperwork is sent to the registrant. If there is a mistake in the registration submitted by a dealer, it cannot be corrected using electronic submission. Rather, any corrections must be physically taken to the agency and processed in person, contributing further to congestion, delays, and errors, as it is possible that a dealer would simply avoid correcting a mistake because of the time and resources it would take to do so.

When CIVLS is established, dealers will largely have access to the same database that is used by the agency, meaning that when a dealer registers a car, the registration is processed in real time, as if the car were being registered by agency personnel. In addition to significantly reducing wait times for documentation, agency database collaboration will also allow the dealer to correct mistakes from the dealer's own interface.

Financial efficiencies. Beyond efficiency improvements for clients and business partners, the modernization program is also expected to produce financial efficiencies.

Specifically, the 2007 IBM consulting report that recommended acquisition of the CIVLS platform indicated that approximately $1.4 million will be saved annually on registration and titling services alone, largely due to reductions in paperwork, mailing, and vendor costs. Additionally, DMV expects to enhance revenues at the state and local level through improved accuracy and timeliness of such things as property tax collection, late fee collection, and the sale of specialty license plates. All told the project is expected to pay for itself completely within seven years.

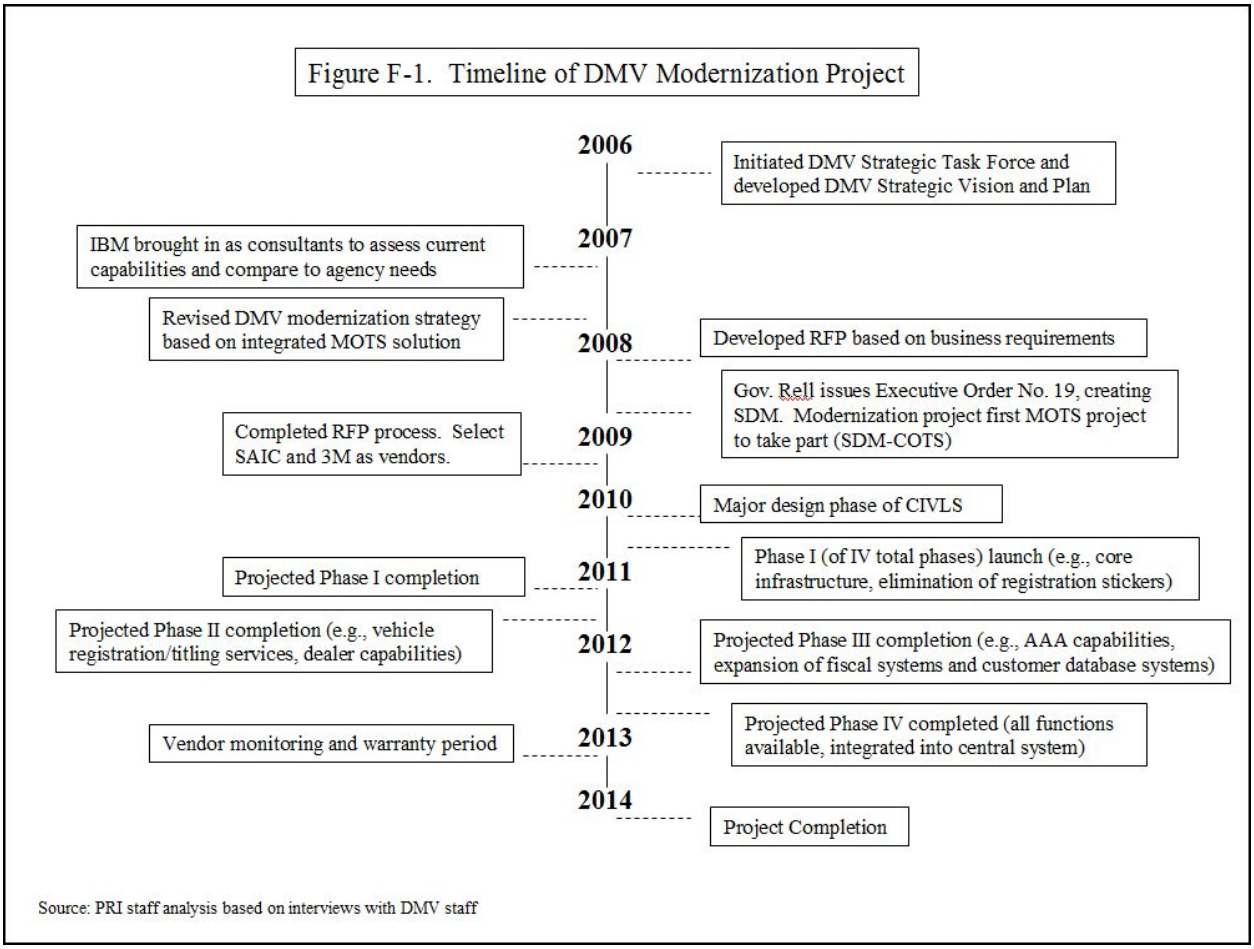
Other expected benefits. Beyond the major areas listed above, DMV expects that the modernization program will allow for implementation of several new agency features, including:

- improved efficiency in the handicap licensing program;
- more reliable e-signature process;
- barcode-based registration services;
- online permits for commercial insurance; and
- installation of kiosks at agency offices to allow clients without internet access to self-help.

Modernization project process. In order to determine whether there was a need for a technology solution, DMV's evaluation asked a few key questions, all of which were answered in the affirmative:

- "Does it provide greater value at a lower cost?"
- "Are online transactions reducing government costs?"
- "Are there positive effects on the economy and society at large?"

Beginning in 2006, DMV created an internal strategic task force that developed the DMV strategic vision and plan. In 2007, DMV engaged IBM Global Services Consulting (IBM) to re-examine the major functions of the agency and attempted to classify their current systems and determine which systems remain necessary or useful. Additionally, the IBM study also produced fiscal projections, including a cost/benefit analysis that provided the basis for the expected long term savings for the agency. Following the evaluation, planning for the modernization program began**.** Figure F-1 shows a timeline of the implementation of the modernization program.



System selection. In 2007, DMV decided to formally pursue a comprehensive technological solution that would replace several independent intra-agency automation plans. With a demonstrated need for a new system solution, DMV developed a list of components that a new system would require to be successful, which include:

- improved timeliness and responsiveness to clientele;
- streamlined, standardized, and integrated business and system processes; and
- modernized agency-wide systems, including supporting technologies such as document management.

To determine how others had approached similar challenges, DMV, with the help of outside consultants, looked at the solutions and organizational situations of several similar agencies in other states. Observation of other states and a comparison of system needs to available options led to the choice of a commercial off-the-shelf software (COTS) system solution. The use of a COTS solution was determined to meet most of the agency's business needs, while saving a considerable amount of money. A completely custom built system was projected to cost nearly twice as much as a COTS solution (approximately $40 and $22 million, respectively).

Developing a COTS framework. The decision to use a single comprehensive system that addressed the agency's business requirements culminated in the creation of a request for proposal (RFP) in 2008. In June 2008, while the modernization project was being planned, Governor Rell issued Executive Order No. 19, which called on DOIT to create a system development methodology (SDM).[49] Because the cost of acquiring the necessary software exceeded minimum thresholds, the modernization project was subject to the newly instituted SDM requirements. However, SDM was primarily focused on the acquisition of custom built systems, not off-the-shelf software. Due to this incongruity, DMV worked with DOIT to develop an SDM subset, SDM-COTS, that would focus particularly on the challenges associated with choosing, acquiring, and integrating commercial off-the-shelf (COTS) solutions.

DMV recognized that any COTS system would need to be modified slightly to meet its specific business needs. When a COTS product needs slight alteration, either to repurpose existing systems or to comply with certain technical needs, it is referred to as a modified off-the-shelf system (MOTS). The combination of a large percentage of core needs met and flexibility eventually led to the acquisition of a MOTS system as the core of the modernization project.

By all accounts, the DMV modernization project has thus far been a model of a successful SDM process. In interviews with PRI staff, DMV personnel indicated that the SDM process and much of the design phase of the project have thus far been successful due to the extensive work that went into determining the agency's business needs prior to assessing the technical capability options.

Project implementation. In 2009, the comprehensive RFP process concluded. The agency selected SAIC as the primary vendor who would partner with 3M Motor Vehicle Solutions. Working with the two vendors, the major design phase lasted five months, from February to June 2010. The project administrators decided to use an incremental approach to system implementation, focusing on projects that would have largest visible impact with the lowest amount of uncertainty (e.g., elimination of registration stickers). The implementation would be completed over four phases, beginning with Phase I in the first quarter of calendar year 2011. The final integration of the system, Phase IV, is scheduled to begin in late 2012.

As part of the acquisition contract, the vendors will aid in training and provide warranty service until 2014, at which point the project will be complete.

Funding. Funding for the modernization program began as part of DMV's FY 2005 operating budget ($1.2 million). In FY 2006, $10 million was made available through bonding specifically for upgrades of DMV's technology system. In FY 2008, an additional $14 million was bonded for the same purpose. The combined $24 million in bonding from FY 2006 and FY 2008 has been allocated. An additional $3 million is available through bonding for FY 2010, but, as of August 2010, had not been allocated. The CIVLS project specifically has a fixed price contract of $26.9 million, approximately equal to the $27 million bonded for the project thus far.

49The SDM was discussed previously, in greater detail, in Section II.

E-Licensing

Another example of collaboration between multiple agencies can be illustrated by the E-Licensing system that is shared by the Department of Consumer Protection (DCP) and the Department of Public Health (DPH). The E-Licensing system is a credential management system. Licensees can renew their licenses, change their address and request license verifications. E-licensing also provides other services available to the general public, such as license lookup.

History of E-Licensing effort. A brief history of DCP's and DPH's separate efforts to offer professionals an online license renewal system highlights the role of DOIT in facilitating the eventual collaboration between DPH and DCP. The Department of Consumer Protection received $250,000 in funding in 1999 to switch from an old licensing system to a new one because of Y2K compliance issues. An RFP was issued, a vendor offering an e-license commercial off-the-shelf product was selected and the system was implemented in 1999, providing for online licensing.

Soon thereafter, in 2002, DPH was allocated $50,000 to examine its current IT system to determine if it could be upgraded to allow for e-licensing of health professionals. Based on this examination, DPH concluded that the system was too old to upgrade and the department would need a new system in order to implement an e-licensing program. Funding, however, was not allocated.

Recognizing the need for better workforce data, in 2007 the legislature mandated DPH to create a secure online license renewal system for physicians, dentists, and nurses, by July 1, 2008 under P.A. 07-185. The department was given a $1,645,000 appropriation for the project. The mandate was a result of needing better workforce data, particularly on nurses, since shortages were occurring and predicted in these fields. The act required DPH to allow those using the system to pay their fees by credit card or electronic funds transfer from a bank or credit union account; it also gave DPH the power to charge a service fee of up to $5 for such payments. P.A. 08-184 amended the requirement by extending the time-frame allotted under the original act. The act required DPH to report to the Public Health Committee on the feasibility and implications of implementing a biennial license renewal system for nurses, by January 1, 2009.

After DPH received funding, the department hired a vendor to conduct a needs assessment (spending part of $1,645,000). Once the needs assessment was complete, the public health department was ready to issue an RFP, which required DPH to submit it to the Department of Information and Technology for review and approval. When DOIT received the request, in January 2009, DOIT informed DPH that DCP already had an existing e-licensing system in place, and there was an opportunity for DCP and DPH to share the system, instead of DPH developing a whole new system. DPH was initially resistant but the mandate deadline and meeting with consumer protection staff collaboratively, reassured DPH that the system could be customized to meet its needs.

In interviews with PRI staff, DPH staff indicated that DOIT was extremely helpful and enthusiastic about the project. DOIT is the host for the e-licensing system. DOIT performed a

major conversion of DPH data to make it compatible with DCP's system so that that DPH was ready to offer online licensing beginning July 1, 2009.

Benefits. There were several advantages to DPH sharing DCP's system rather than creating its own. DPH was able to leverage $1.63 million and enter all health professions and health facilities into the new data system, with the intent of phasing in e-licensing. In addition, while major upgrades are the responsibility of the vendor, the vendor was willing to allow each department to directly make every-day system changes (such as changes to licensing fees), thus providing for a highly configurable system. Both departments believe that sharing system costs between the two departments has allowed them to build better databases by leveraging funds.

Another system advantage that is apparent to those renewing a license online, is that if multiple licenses are needed within a single agency or between the two agencies, the licensee only must complete information only one time and not have to re-enter the same information for each license. In addition, if an individual receives multiple licenses, even across agencies, all fees are totaled and payment can be made based on the aggregated amount.

According to both departments, feedback on e-licensing from professions has been positive. Department staff have helped ease the transition by providing support for professionals that are having trouble completing e-licensing application. In addition, both departments have taken similar marketing strategies to inform licensees of the ability to renew licenses, including working through professional and trade associations, inserting information inside of renewal notices, and publishing the ability to renew on their respective websites.

Other agencies scheduled to share system. Three other state agencies (the Departments of Agriculture, Public Safety, and Special Revenue), and the Board of Accountancy, are scheduled to share the system and go online this calendar year. Efforts have been guided by a multi-agency steering committee of DCP, DPH, DOIT and OPM. The Department of Consumer Protection and DPH have worked with all of the new agencies to assist in configuration and conversion of data to be able to share the E-Licensing system. The data conversion for the Board of Accountancy will be completed by October 15, 2010; DPS is scheduled to be completed by November 2010; the Department of Agriculture by January 2011; and the timeline for the Department of Special Revenue has not yet been set.

DCP online licensing statistics. The Department of Consumer Protection had 225,000 active licenses, registrations, or permits in FY 10, of which 41,086 (18 percent) were renewed online. This figure pertains only to the total number of licenses, permits, or registrations issued; it is not the unique number of individuals that went online to obtain them (i.e., if one person obtains three different permits, that would be counted three times). According to DCP, approximately 30,000-35,000 individuals are cross-licensed by both DPH and DCP (e.g., individuals may be licensed as a doctor and hold a controlled substance registration from DCP, a health professional who also is licensed as real estate agent, or an emergency medical technician who also does trade work regulated by DCP).

DPH online licensing statistics. In the first full year of the program, a total of 15,785 (17 percent) DPH physicians, dentists, and nurses renewed on-line. The breakdown by

profession, by month is shown in Table F-1. The total number of licensees is also shown as is the percent that are renewing online.

Table F-1. DPH Online Licensing Statistics (FY 10)					
Month	***RN/LPN***	***APRN***	***Dentist***	***Physician***	***Total Online Renewals***
July	34	3	3	36	76
August	181	9	4	45	239
Sept.	233	17	8	34	292
Oct.	597	88	16	261	962
Nov.	1,322	95	44	350	1,811
Dec.	1,259	63	36	315	1,673
Jan.	1,386	87	57	335	1,865
Feb.	1,231	73	49	300	1,653
March	1,417	67	54	413	1,951
April	1,234	73	37	326	1,670
May	1,208	72	58	381	1,719
June	1,369	80	60	365	1,874
Total	11,471	727	426	3,161	15,785
Total Licensees	67,582	3,281	3,280	16,702	90,845
% Renewing Online	17%	22%	13%	19%	17%
Source: DPH					

Connecticut Criminal Justice Information System (CJIS)

The Connecticut Criminal Justice Information System is an ongoing information technology initiative among the criminal justice agencies involving the standardization of data elements, the improvement of criminal history records, and the integration of data. The CJIS project has a long history, beginning in the mid-1970s when the criminal justice community recognized the need to share information among agencies. However, at that time there was no cost-effective technology to support the vision of an integrated system. Therefore, agencies continued to develop their individual systems to meet their respective statutory responsibilities, resulting in a fragmented or "silo" environment. In the 1990s, some interfaces between systems began to emerge but there was no overall plan or specific system architecture. By the late 1990s and mid-2000s, the state devoted much effort into creating a single source repository of criminal offender data known as the Offender Based Tracking System (OBTS). In 1999, the CJIS Governing Board was established to manage OBTS which is a core component of the ongoing CJIS project.

Pursuant to P.A. 08-01 (January Special Session), the CJIS Governing Board is mandated to design and implement a comprehensive, statewide information technology system for criminal justice. (The statutory system requirements are outlined at the end of this appendix.) The board's objective is to facilitate immediate, seamless, and comprehensive information sharing among criminal justice agencies and law enforcement officials. A multi-agency initiative, the CJIS project bridges different branches and levels of government:

- Department of Public Safety, Division of State Police;
- Judicial Branch's Office of Chief Court Administrator;
- Judicial Branch's Court Support Services Division ;
- Division of Criminal Justice, Office of the Chief State's Attorney;
- Division of Public Defender Services, Office of Chief Public Defender;
- Department of Correction;
- Board of Pardons and Paroles;
- Department of Motor Vehicles;
- Office of Victim Advocate;
- Department of Emergency Management and Homeland Security;
- Office of Policy and Management, Criminal Justice Policy and Planning Division;
- Department of Information Technology; and
- Connecticut Police Chiefs Association.

CJIS management structure. The Connecticut Criminal Justice Information System Governing Board, within OPM for administrative purposes, includes representation from the executive, judicial, and legislative branches of state government. Municipal law enforcement is also represented. The board is co-chaired by the Lieutenant Governor and the Deputy Chief Court Administrator. Additional committees support the work of the CJIS board. The board establishes the direction and policy on justice information, and facilitates the coordination and

integration of CJIS programs. The Connecticut Criminal Justice Information System initiatives relate to both federal and state programs. Table F-2 provides a list of CJIS initiatives.

Table F-2. Listing of CJIS Program Initiatives	
Initiative	***Purpose***
Offender-Based Tracking System (OBTS)	Establishes a single source of criminal justice data to allow agencies and criminal justice professionals to effectively and efficiently track offenders and their associated cases.
Automated Fingerprint Identification System (AFIS)	Offers the technology to enable state and federal identification of individuals who have been arrested and booked in as little as one hour. Background applicant checks for child-care, elder-care, and volunteer positions will be available within 24 hours.
On-Line Booking System (OLBS)	Collects arrest data at the time of booking and immediately made available to the court, the computerized criminal history (CCH), the Offender Based Tracking System, the AFIS, and the law enforcement booking agencies' record management system.
Image Repository system (IRS)	Creates a state-wide repository of images including mugshots, scars, marks, and tattoos, missing persons, and stolen property and integrate these images with the appropriate applications such as the OBTS, On-Line Booking systems, and the State Police Bureau of Identification System(s).
Proposed Incident Report Warehouse	Provides a state-wide repository of incident reports in a common format for use in criminal investigations, data sharing, and crime mapping.
Source: CJIS website	

The 2008 act mandated the hiring of an executive director to serve at the pleasure of the board. The executive director is responsible for overseeing the design and implementation of the CJIS statewide IT system. In August 2008, the board selected its executive director.

Pursuant to the act and before the executive director was selected, DOIT prepared a RFP on behalf of the board. The proposal was for consultants to develop a blueprint of the business and technical requirements for the design and implementation of the CJIS IT project. The new executive director, along with a cross-section of the CJIS community, reviewed the RFP, which was issued through the DOIT procurement process. Adhering to the statutes, the DOIT CIO signed off on the CJIS recommendation but was not involved in any of the selection process and decision making with the RFP.

Assessment and evaluation. MTG Management Consultants, LLC (MTG) was selected to begin work on the blueprint project in January 2009 with a completion date of July 2009. The CJIS blueprint project was to fully map the existing criminal justice information system and provide a gap analysis of all the criminal justice agencies, to build a second RFP for the information sharing system. (A second RFP is necessary because state guidelines prohibit the same company or person who develops an RFP and sets the requirements to also bid for system development and maintenance.)

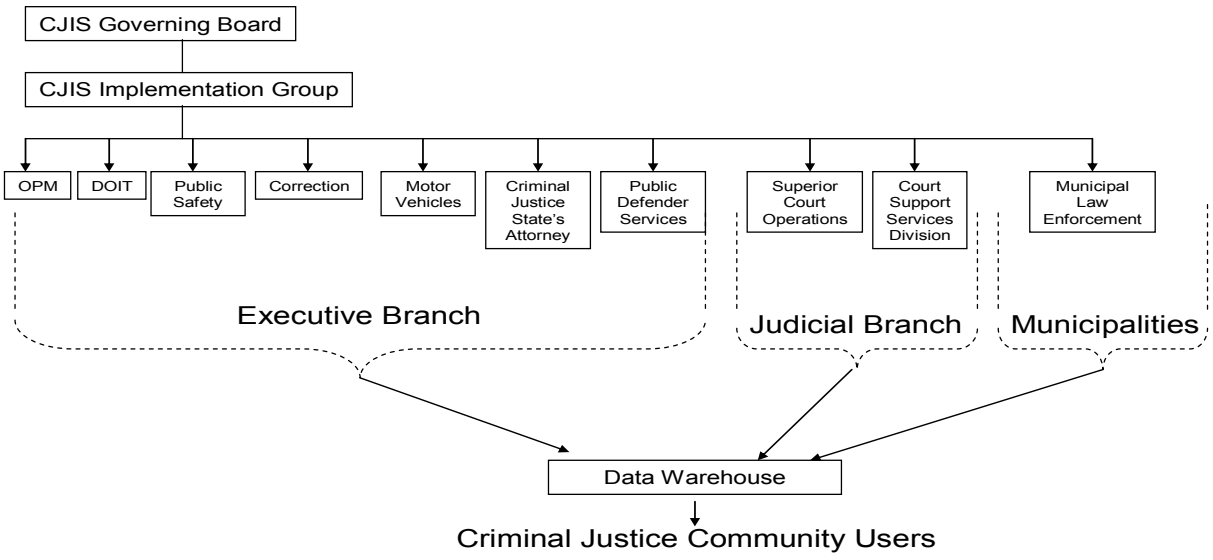
The blueprint project outlines the current state of criminal justice organizations' business processes and how information is communicated. According to a MTG summary report, the existing criminal justice community consists of 11 agencies with more than 23,000 staff

members, using 52 automated systems to support their business needs.[50] MTG's blueprint report identified more than 400 data exchanges. Many of the data exchanges are paper-based and often are limited to a two-agency exchange established by using individual agency relationships rather than a system-wide initiative.

MTG found the current level of data integration in the state is primarily done manually or based on tools that only allow a user to look up information in partner agencies' systems. Given the multitude of disparate systems, criminal justice practitioners must go through various systems in order to obtain a complete picture of the criminal justice process and the individuals within that process. The resulting system, therefore, is a collection of organizational processes with linking document transfers that relies on information moving via paper and limited electronic exchanges. In addition, MTG found that some of the supporting processes for the data exchanges require re-engineering. It also concluded that there are no cost-effective means of developing and managing an integrated justice solution using the existing technology.

MTG's gap analysis included recommendations and a strategy for the CJIS RFP, which has since been approved by the CJIS Governing Board. The board recommended implementation of an enterprise system approach that will have a CJIS-wide impact; it will still allow each of the individual agencies to maintain control over its own system. The board will establish technology and security standards in concert with DOIT. Figure F-2 illustrates the CJIS project management structure.

Figure F-2 Connecticut Justice Information System Project Management Structure



Source: CJIS Governing Board – Legislative Report January 1, 2009

50 Report to the Legislature, Status of the Criminal Justice information Sharing System, July 1, 2009 (Attachment A)

Current status. MTG is now completing Phase 1 (Business Issues) of DOIT's system development methodology (SDM). The completion and release of the second RFP are the next steps of the CJIS implementation project. The RFP was expected to be released in August 2010, but has not yet occurred. After the RFP is released, the board will receive proposals and complete the selection process for the provider.

The RFP will require that the provider work with the CJIS agencies to further define the information exchanges. Part of this work will also be to detail the agency processes that are supported by the exchanges. Ultimately, the business rules developed for the information exchanges will delineate who gets what, when, and under what conditions.

The selected provider will be required to continue use of the SDM process in the design and implementation of CJIS. During that time, the provider will work closely with CJIS partner agencies and DOIT staff to complete the design phase. A testing strategy and plan will also be created. The provider will then continue the construction phase, including such tasks as establishing an infrastructure, creating test cases, and developing user documentation. The last phases of SDM include testing, implementation, and post-implementation. According to a recent CJIS report, these implementation efforts will continue through FY 2015.

Funding and reporting requirements. The board was originally appropriated $3 million for FY 2007-08 for the system design and implementation. According to the CJIS Governing Board's report to the legislature, the estimated capital cost of the system implementation is $20.7 million over a 6-year period. The ongoing costs over that same period are expected to be $13 million. The cost-benefit comparison prepared by MTG suggests that the initiative will have a break-even period of less than 3 years, with a return on investment of 185 percent.[51]

The board has been required to submit status reports since July 2008, and continuing each January and July 1st thereafter to the Judiciary and Appropriations committees. It must make a presentation to these committees in conjunction with each January's report and give additional presentations during the ensuing regular legislative session concerning the status of the system's design and implementation, along with a specific itemization of any additional resources needed.

51 Report to the Legislature, Status of the Criminal Justice information Sharing System, Jan. 1, 2010 (Attachment B)

Judicial Branch E-Government Initiatives

As noted earlier, the following is a listing of recent judicial branch e-government initiatives.

1. *Appellate System case look-up section* – public web inquiry for current information on cases on appeal similar to what is available for civil and family trial court matters

2. *Attorney disciplinary records* – part of judicial website to include attorney's past disciplinary history

3. *Court forms* – new interactive forms to assist individuals with completing court forms

4. *Information about Court Support Services Division* – information on programs

5. *Information in different languages*- translating additional sections in Spanish

6. *Self-help in the areas of juvenile, family and probation* – frequently asked questions about juvenile and family services

7. *Streaming videos*- videos explaining various court processes

8. *E-filing* – enhancing and expanding existing applications

9. *Foreclosure notices* – allowing advertising foreclosures on website to save homeowners the cost of advertising

10. *Jury postponements* – allow jurors to postpone jury service through the website

11. *Appellate System* – make Supreme Court briefs available on-line

12. *Navigations* – efforts to allow users to skip repetitive links

13. *Plain language* – change text in self-help sections for plain language and readability compliance

14. *Site design and navigation*- seek methods to feature self-help areas more clearly, make forms easily accessible and offer more guidance to those not familiar with the website or court business in general

CJIS Statutory System Requirements

According to state law[52], the system must include a centralized tracking and information database, electronic document repository, and analytical tools. They must be developed with state-of-the-art technology.

Tracking and Information Database. The central, integrated tracking and information database must provide:

- complete biographical information and vital statistics for all living offenders and former offenders; and

- tracking information for all offenders in the criminal justice system, from investigation through incarceration and release, and seamless integration with electronic monitoring systems, global positioning systems, and offender registries.

Electronic Records Repository. The central, integrated electronic repository of criminal justice records and documents must provide access to:

- state and local police reports, presentence investigations and reports, psychological and medical reports, criminal records, incarceration and parole records, and court records and transcripts, whether the records and documents normally exist in electronic or hard copy form; and

- scanning and processing facilities to ensure that records and documents are integrated into the system and updated immediately.

Centralized Analytical Tools. The centralized, analytical tools must be bundled together in a custom-designed enterprise system that includes:

- tools that empower and enhance criminal case assessment, sentencing, and plea bargain analysis and pardon, parole, probation and release decisions;

- tools that empower and enhance forecasting concerning recidivism and future offenses for each individual offender; and

- collaborative functionality that enables seamless cross-department communication, information exchange, central note-taking, and comment capabilities for each offender.

State-of-the-Art Technology. State law directs that the system be developed with state-of-the-art relational database technology and other appropriate software applications. The system must be:

52 C.G.S. Sec. 54-142s.

- completely Internet-accessible by all authorized criminal justice officials;

- fully integrated with information systems and database applications used by state and local police, law enforcement agencies, and other agencies and organizations the governing board deems necessary and appropriate;

- indexed and cross-referenced by offender name, residence, community, criminal offense, and any other data points necessary for the effective administration of the state's criminal justice system;

- fully text searchable for all records;

- secure and protected by high-level security and controls;

- accessible to the public, subject to appropriate privacy protections and controls; and

- monitored and administered by the CJIS Governing Board, with the assistance of DOIT.

Appendix G

Methodology used by Brookings Institution State Ranking (Darrell M. West)

A zero to 100 point e-government index for each state website was created to rank 50 states overall. Four points were awarded for each of the following 18 features:

- Publications
- Databases;
- Audio clips
- Video clips;
- Foreign language access;
- Not having ads;
- Not having user fees;
- Not having premium fees;
- W3C disability access;
- Having privacy policies;
- Security policies
- Allowing digital signatures on transactions;
- An option to pay via credit cards;
- E-mail contact information;
- Areas to post comments;
- Option for e-mail updates;
- Allowing for personalization of the website; and
- PDA or handheld device accessibility.

These features provided a maximum of 72 points for a specific website.

Each site can then earn up to 28 additional points based on the number of online services executable on that site; zero for no services, one point for one service, two points for two services, three points for three services, for points for four services, and a maximum of 28 points for 28 services or more.

The e-government index therefore runs along a scale from zero (no features and no online services) to 100 (all 18 features plus at least 28 services). The total for each website is averaged across all of the state's websites to produce a zero to 100 overall rating for that state. On average, the report assesses around 30 government websites in each state across all three branches of government.

Coding Instructions for State/Federal Websites (updated May 8, 2008)

Logon to a Taubman Center computer. Use Internet Explorer to open the website, *www.InsidePolitics.org*. Minimize the screen and use the cursor to resize it so that it occupies the upper two-thirds of your computer screen.

Click on SPSS and open the file I have emailed you called "coding08state.sav". Save this file to the hard drive of your computer. Minimize the SPSS data file and use your cursor to resize it so that it occupies the lower one-third of the screen. With both of these screens open, you can code the websize contents directly into the SPSS file. At the end of the coding, make sure you save the contents of the SPSS file through File, Save.

Once you are set for coding, click on the "States" link at the bottom of InsidePolitics.org and choose a particular state government. You will see the official websites of the 50 states. Click on the state sites you are assigned, and code webpages for Executive, Legislative, and Judicial pages. You will code one line of data for each website. There will be around 30 sites per state and one for each federal agency. For many of our variables, you will be entering a 0 for no or a 1 for yes.

For federal websites, click on *www.firstgov.gov*, and code federal webpages under Executive, Legislative, and Judicial branches (see pointers on left side of firstgov homepage).

RA Last Name: your last name

Website URL: you don't need to include www but should include the rest of the URL for that site.

Website Name: such as Human Services. The name of the website can be shortened down (i.e. just typing 'Agriculture' instead of 'Department of Agriculture'). However, it is very helpful to be thorough when marking down the website name in case you have to go back to a site you previously worked on.

State: enter two digit upper case alphabetic code such as RI for Rhode Island or CA for California (see list shown below). Use US for all national government sites. Do not use periods in state or US abbreviation.

AL Alabama	IN Indiana	NE Nebraska	RI Rhode Island
AK Alaska	IA Iowa	NV Nevada	SC South Carolina
AZ Arizona	KS Kansas	NH New Hampshire	SD South Dakota
AR Arkansas	KY Kentucky	NJ New Jersey	TN Tennessee
CA California	LA Louisiana	NM New Mexico	TX Texas
CO Colorado	ME Maine	NY New York	UT Utah
CT Connecticut	MD Maryland	NC North Carolina	VT Vermont
DE Delaware	MA Massachusetts	ND North Dakota	VA Virginia
FL Florida	MI Michigan	OH Ohio	WA Washington
GA Georgia	MN Minnesota	OK Oklahoma	WV West Virginia

HI Hawaii	MS Mississippi	OR Oregon	WI Wisconsin
ID Idaho	MO Missouri	PA Pennsylvania	WY Wyoming
IL Illinois	MT Montana		US All Federal sites

Branch: code 1 for executive branch, 2 for legislative branch, 3 for judicial branch, and 4 for portal page (the homepage for each state that serves as the gateway for all the websites of a particular state). The legislature and judiciary often have their own portal-like pages, but you still should code the branch as 2 and 3, respectively.

Particular Agency: Enter numeric code shown below on next page. **If coding an agency not easily classifiable, just leave it blank.** Also, leave this field blank for legislature and judiciary portal sites. As agency titles vary from state to state, here are the various headings we used for each agency that often used different names and where some of the more problematic agencies can be found.
Controller: Also can be Auditor or Comptroller
Health: sometimes Public Health
Human Services: Social/Family/Welfare Services
Environment: Environmental Quality/Protection
Higher Education: Postsecondary Education, Board of Regents
Housing: Often goes under the name of Housing Development/Finance Authority
Motor Vehicles: Can be difficult to find, usually part of the Transportation department, but also can be part of varied departments like Revenue, Secretary of State, or a separate entity altogether. Use the search engine if you cannot find it.
Business License: Some states have specific licensing departments, but not often easy to find. Check the state portal page to see if there is an online service for business/vendor registration or corporate filing and work from there.
Hunting License: Either a distinct department (such as Game and Fish, Wildlife) or a subdivision of Natural Resources
Elderly: Aging/Senior Services. Often found in the Health or Human Services departments
Elections: Sometimes a distinct agency, usually part of the Secretary of State
Consumer Protection: Usually found through the Attorney General's page
Business Regulation: Professional Regulation, Commerce

Statewide Officials	**Ex Agencies**	**Legislature**	**Judicial**
1 governor	10 health	50 House	80 Supreme Court
2 lt governor	11 human services	51 Senate	81 Superior Court
3 attorney general	12 environment	52 A Committee	82 District Court
4 secretary of state	13 taxation/revenue	53 Leg Bills	83 Family Court
5 treasurer	14 labor/employment	54 Leg Membership	84 Workers Comp.
6 controller	15 elem/sec education	55 Leg Journals	85 Appeals Court
	16 higher education	56 Leg Rules	86 Circuit Court
28 planning	17 housing	57 Constitution	
29 elderly	18 corrections		

30 veterans	19 econ development		
31 elections	20 motor vehicles	24 admin/personnel	99 portal page
32 ethics	21 business license	25 natural resources	
33 consumer protection	22 hunting license	26 tranportation	
34 business regulation	23 agriculture	27 budget	

Has Online Publications: 0 no, 1 yes This category includes news releases, newsletters, journals, reports, studies, laws, or constitutions. Often major reports are in PDF format. These would count as publications.

Offers Online Databases: 0 no, 1 yes This can vary widely from statistics, charts, tables, data to actual databases (which are like search engines except for that they are customized to retrieve specific information rather than search the entire website). Phone directories and job opening listings were not included as a database. Databases are often found in the statistics, information, or publications sections of webpages.

Has Audio Clips: 0 no, 1 yes Any sound file whatsoever, whether it be in the form of a speech, radio show, radio public service announcement, podcast, website welcome or music, such as a state song or national anthem. These can often be deeply embedded in websites and hard to find. Try searching Google for "site:www.site.gov audio." Also try other Google searches that might turn up audio files by replacing "audio" with "mp3," "windows media player," "real player."

Has Video Clips: 0 no, 1 yes Any video file. Examples are televised speeches/events, department commercials, public service announcements, and website welcome. Could be a video clip or example of streaming video. Powerpoint presentations, slideshows, and Java content are not included as video clips. These can often be deeply embedded in websites and hard to find. Try searching Google for "site:www.site.gov video." Also try other Google searches that might turn up audio files by replacing "video" with "mpg," "windows media player," "real player." Some sites display non-continuous webcam images (e.g., a traffic webcam which updates every 5 seconds) – these do not count as video clips.

Has Foreign Language or Language Translation: 0 no, 1 yes Can be a webpage entirely in a non-native language (ex. 'Espanol' for English-speaking countries), a link to language translating software like Babelfish, or having publications available in other languages. Some sites have links to translation software from the homepage. Other sites have only a publication (e.g., driver's manual) or downloadable form in other language—this counts. As these can be hard to find, try searching Google for "site:www.site.gov espanol" or "site:www.site.gov Spanish."

Has Commercial Ads: 0 no, 1 yes Do not count as ads links to website developer and computer software available for free download such as Adobe Acrobat Reader, Netscape Navigator, or Microsoft Internet Explorer since they are necessary for viewing pages. Traditional banner or pop-up ads count. Ads have to be clear commercial sponsorships of a

product or service. It must appear that the advertiser paid for the placement and the ad must lead the visitor to the external commercial website. Listings of phone numbers and web addresses provided for the visitor's convenience (such as a directory of airlines or hotels or listing of tax assistance services) do not count, but banner ads that the advertiser paid for do. Many links on sites appeared to be ads, but after clicking on them, they were only promoting a particular government program or event. Links promoting state tourism often took this form.

Has Website Section Requiring Premium Fee for Entry: 0 no, 1 yes Fee required to access particular areas on website (such as business services, access to databases, or viewing of up-to-the-minute legislation). This is not the same as a user fee for a single service. For example, you would not code a yes for the fact that some government services require payment to complete the transaction. This indicator is more for website sections requiring payment to enter that area or to access a set of premium services. Code subscription service as a yes for premium fee if there is a cost associated with the subscription. Count as yes if you have to pay a set annual subscription fee, even if the visitor has to pay user fees in addition to the fixed annual subscription fee. Most subscription services have a "home page" on the portal and provide services on various agency websites—code "yes" for both the portal and the individual agency websites where the subscription services are found.

Site Meets W3C Disability Guidelines: 0 no, 1 yes To evaluate this, use the Wave Version 4.0 software found at http://wave.webaim.org developed by the Center for Persons with Disabilities at Utah State University. Type in the URL for the front page of the website you are evaluating and click on "Wave This Page" to determine whether the site meets accessibility guidelines. You will get a report indicating whether the site meets or does not meet the guidelines.

Has Privacy Policy on Site: 0 no, 1 yes Any mention of the privacy policy of the particular websites, even if it merely says the site has a privacy policy. Sometimes, a privacy policy can be found at the bottom of the page under about us, privacy, or copyright section. Occasionally the privacy policy only appears on the page where the user has to input information. Try searching Google for "site:www.site.gov privacy policy" or "site:www.site.gov privacy statement."

Privacy Policy Prohibits Commercial Marketing of Visitor Information: 0 no, 1 yes The privacy policy states that it doesn't give/sell/rent visitor information to third parties. Can also code "yes" if the policy states that user information will only be used for the purpose for which it was submitted.

Site Prohibits Creation of Permanent Cookies or Individual Profiles of Visitors: 0 no, 1 yes Most privacy policies say whether they use session cookies (which are deleted when the browser is closed) and/or permanent cookies (which are saved on the hard drive). Code "yes" if the privacy policy prohibits permanent cookies and "no" if it does not.

Site Prohibits Sharing Personal Information Without Prior Consent of User: 0 no, 1 yes The website will only share personal information (such as giving your home address) with your consent and to specifically answer your question. Passing on information to law enforcement

authorities would not be coded as a yes since that is a non-commercial reason for sharing personal information.

Site Can Share Personal Information With Legal Authorities or Law Enforcement: 0 no, 1 yes The website will share personal information (such as giving your personal information) with legal authorities, law enforcement, or to a court under a court order. Sometimes policy specifically states that it will share with law enforcement if necessary, while other times policy states that it will disclose "when permissible."

Has Visible Security Policy: 0 no, 1 yes The security policy is its own distinct link or part of the privacy policy. Once again, any mention of the policy is adequate for coding. If the site is listed as being "secure," that would be coded as having a visible security policy too.

Security Policy Uses Computer Software to Monitor Network Traffic: 0 no, 1 yes Most all security policies with this feature will distinctly say that they use computer software to monitor network traffic. Aesthetic/informational features like webcounters do not count. May not specifically say it uses "software". Might say it tracks IP address, domain, browser type, etc.

Has Official Govt Services Available to Citizens: 0 no, 1 yes Can take a variety of forms. Often an actual state service where the entire transaction can occur online such as ordering a motor license, registering to vote, applying for a business permit, filing taxes online, etc. If you have to order a service online and then mail something in to execute the service, it is not fully transactable online and therefore is not considered an online service. Services must provide features where citizens/businesses apply for a service online and receive some tangible product/benefit in return. Some examples of this are ordering publications, renewing license, and filing taxes. Being able to fill out an online application and electronically submit it directly to the department. Entering social security numbers to check tax refund status would be considered a service since one is not merely entering information, but the government is providing specialized information to the web visitor. Databases that generate customized results for the user count as services. Dynamic maps showing status of major highways count as services. Databases of judicial opinions, legislative bills, and attorney general opinions count as services. Think of services as something that a citizen can take care of entirely on the website, without having to mail something in, make a phone call, or visit an office. But mere text – whether on a web page or on a publication – does not count. Must involve inputting information, whether personal details or database queries. Furthermore, many websites have 'Service' links that provide no actual online services (instead just info on different programs run by the agency), so we had to check the links specifically for that purpose. Another important note is that even if the link to an online service connects the user to a different department to complete the transaction, it still counts as a service for that site. This is often seen on the state portal pages, as they document many of the services available on all of the different agencies' sites.

Has Services Requiring User Fee: 0 no, 1 yes Fee required to execute a particular service online. For example, if a driver's license costs $25 and the citizen has to pay $25 online, that would not be a user fee. It is just the normal fee for the service. If, however, the agency charges a $3 processing fee on top of the $25, that would be a user fee.

Number of Different Services: code actual number (0 if none) Simply count the number of online services. A site offering both hunting and fishing licenses would be coded as two services since those serve different needs and different audiences.

Allows Digital Signatures on Transactions: 0 no, 1 yes (if not apparent, code no) Code "yes" if site specifically mentions that it has digital signature capabilities. Otherwise, code "no."

Allows Payments Via Credit Cards: 0 no, 1 yes (if not apparent, code no) The website has the capability to use credit cards to complete the online transactions. It was still included even if the link to use the credit cards took us to an external site to enter the information. This often is found in conjunction with services or publications that can be ordered with a credit card.

Can Email Dept (other than webmaster): 0 no, 1 yes Any type of e-mail address for any person or division in the department worked. Even if there is not a specific e-mail address, if there is a specific form that can be filled for comments/questions/suggestions and submitted online, this counts. This is found on the websites of large agencies and top elected officials. The e-mail address of the webmaster does not count, but a general agency address (info@agency.gov) does. Often located under the Contact Us section.

Has Area to Post Comments (other than thru email): 0 no, 1 yes These take the form of user surveys, bulletin boards, chat rooms, blogs, or guestbooks. A comment form that generates an e-mail to the office counts (it also counts for e-mail category above). Simply having an address to e-mail comments and suggestions does not count.

Has Option for Automatic Email Updates, Newsletters, or RSS/XML Feeds: 0 no, 1 yes The website gives the user the ability to sign up and register online in order to receive agency updates in such forms as newsletters, late-breaking news, and website notifications. These updates then are sent out to people who have registered to receive information or notifications.

Allows Personalization of Website (can tailor page to viewer interests): 0 no, 1 yes Can customize website to your particular interests. Often referred to as "MyNC". This can mean either customization for the individual user or customization based on various constituencies (for example, different pages specialized for parents, students, tourists, or teachers.

Has PDA or Handheld Access: 0 no 1 yes. This would include access to the government website through a pager or mobile phone or access through any kind of personal digital assistant (as opposed to computer access through the Internet). Often prominently mentioned on homepage.

Flesch-Kincaid Grade Level Readability: From the front page of the govt website, copy the text by clicking Edit, Select All and then Edit, Copy. Minimize this screen and open a blank Microsoft Word document. Click Edit, Paste to move this website text into the blank Microsoft Word document. To set your computer to display readability statistics in Microsoft Word, click on Tools, Spelling and Grammar, Options, and check box for "show readability statistics" and then click OK. To check the text you pasted into this blank Microsoft Word document, click on Tools and Spelling and Grammar (or the ABC icon on the ruler). Keep clicking on Ignore All

until you come to the end of the text and you see the display of readability statistics. The Flesch-Kincaid Grade Level Readability number is at the bottom of this display. Round to the closest whole number and enter this one or two digit number into your data base. If page generates a "0" score, open a new blank document and paste the contents of the site by going to Edit/Paste Special/Unformatted Text. This still might not work: some sites imbed their text in an image file that Word can't read.

Appendix H

Methodology Used by E-Governance Institute at Rutgers University

(Marc Holzer, et al.)

A zero to 100 point weighted score was assigned to each state website. The weighted scores were then used to create a 50 state rank. The overall score was based on 98 measures: 43 measures were dichotomous (measures were coded 0,1 or 0,3); and 55 measures used a four point scale (measures were coded 0,1,2,3). Descriptions of the four possible codes are given in Table H-1.

Table H-1. E-Governance Scale

Scale	*Description*
0	Information about a given topic does not exist on the website
1	Information about a given topic exists on the website (including links to other information and e-mail addresses)
2	Downloadable items are available on the website (forms, audio, video, and other one-way transactions, popup boxes)
3	Services, transactions, or interactions can take place completely online (credit card transactions, applications for permits, searchable databases, use of cookies, digital signatures, restricted access)

Source: Holzer. U.S. States E-Governance Survey. p 17. 2008.

Each measure was used as part of one of five indexes:

- privacy/security;
- usability;
- content;
- services; and
- citizen participation.

The privacy/security index contained 18 measures while the remaining four indexes contained 20 measures each. The total possible raw score for each index ranged from 25 to 59 for a total of 219 possible points. However, each index was weighted equally, from zero to 20, in the overall weighted score.

General descriptions of the measures used within each index are given in Table H-2.

Table H-2. Descriptions of Measures by Index	
Privacy/ Security	
1-2. A privacy or security	11. Use of encryption
statement/policy	12. Secure server
3-6. Data collection	13. Use of "cookies" or "Web Beacons"
7. Option to have personal	14. Notification of privacy policy
information used	15. Contact or e-mail address for inquiries
8. Third party disclosures	16. Public information through a restricted area
9. Ability to review personal data records	17. Access to nonpublic information for employees
10. Managerial measures	18. Use of digital signatures
Usability	
19-20. Homepage, page length.	25-27. Font Color
21. Targeted audience	30-31. Forms
22-23. Navigation Bar	32-37. Search tool
24. Site map	38. Update of website
Content	
39. Information about the location of offices	49. GIS capabilities
40. Listing of external links	50. Emergency management or alert mechanism
41. Contact information	51-52. Disability access
42. Minutes of public	53. Wireless technology
43. State code and regulations	54. Access in more than one language
44. State charter and policy priority	55-56. Human resources information
45. Mission statements	57. Calendar of events
46. Budget information	58. Downloadable documents
47-48. Documents, reports, or books (publications)	
Service	
59-61. Pay utilities, taxes, fines	70-71. Bulletin board about civil applications
62. Apply for permits	72. FAQ
63. Online tracking system	73. Request information
64-65. Apply for licenses	74. Customize the main state homepage
66. E-procurement	75. Access private information online
67. Property assessments	76. Purchase tickets
68. Searchable databases	77. Webmaster response
69. Complaints	78. Report violations of administrative laws and regulations

Citizen Participation	
79-80. Comments or feedback	90-91. Online survey/ polls
81-83. Newsletter	92. Synchronous video
84. Online bulletin board or chat capabilities	93-94. Citizen satisfaction survey
85-87. Online discussion forum on policy issues	95. Online decision-making
88-89. Scheduled e-meetings for discussion	96-98. Performance measures, standards, or benchmarks
Source: Holzer. U.S. States E-Governance Survey. p 65-66. 2008.	

Appendix I

Online Service List from CT.gov

Table E-1. Online Services List by Category
Reference
Ask a Question of the CT State Library
Visit the Connecticut Digital Library
CT Recovery Initiative
Public Safety
Register to Receive Emergency Notifications with CTAlert.gov
Get Notified When A Registered Sex Offender Moves Into Your Neighborhood
Look up Outstanding Arrest Warrants (Violation of Probation)
Look up Criminal/Motor Vehicle Court Cases
Motor Vehicles and Transportation
Pay Your Traffic Ticket Online
Renew Vehicle Registration Online
Verify a License Plate Registration
Find Auto emissions test date and location
Find a Ride in Your Region
On-Line "Vanity Plate" Lookup
Take an Online Driver's License Practice Test
Taxes
Taxpayer Service Center
Business Registration and On-Line Tax Filing
E-Services - Department of Revenue Services
Employment
General Job Search Assistance
Search/Apply for a Job in CT Film Industry
Virtual Career Counseling - Nursing Careers
File an Unemployment Claim
Find Rental Housing Online with CTHousingSearch.org
Education
Open a College Savings Account

Plan for College
Apply to State Colleges and Universities
Online Assistance/Finish Your Degree
Online Resources/College Information
Online High School Courses
Online State College/University Courses
CT Distance Learning Consortium
Find an Internship
Appointments to State Boards and Commissions
Permanent Commission on the Status of Women Talent Bank
African-American Affairs Commission Talent Bank
Latino and Puerto Rican Affairs Commission Talent Bank
Consumer
Get on Telemarketing "no-call list"
Verify Licenses Online
Check the CT Unclaimed Property Owner's List
Shop at the Department of Environmental Protection Store
Search for Uncashed Tax Refund Checks
Check Latest Wholesale Liquor Prices
Register for Notification
State Surplus Auctions
State Exams and Job Postings
State Procurement Opportunities
Emergency Notifications
Send Feedback
Report Misuse of State Vehicle
Voice Your Opinion to the Governor
Business Registration
State Licensing and Registration Assistance
OnLine Checklist for Business Licensing and Registration
Legal
E-Services (Judicial Branch)

Online Occupational Licensing
Educators (Department of Education)
Insurance (Department of Insurance)
Health Care Practitioners (Department of Public Health)
Occupational (Department of Consumer Protection)
Outdoor/Recreational
Purchase a Hunting or Fishing License
Make state campground reservations on-line
Order a Copy of the Connecticut Vacation Guide
Report a Black Bear Sighting
Report a Dead Wild Bird sighting
Environmental
Track State Energy Use
Enroll in a Clean Energy Program
Download GIS Data (CT Environmental Conditions Online)
Elderly Services
Find Benefits
Health and Well Being
Look up Health and Environmental Information
Find a Flu Vaccination Location
Register for State Online Walk it or Bike It to School Challenge
Source: CT.gov as of 12/4/2010

Appendix J

Department of Information Technology's Web E-Government Best Practices

The following document is one of nine best practice documents made available by DOIT.[53]

Web E-Government Best Practices:

Best Practice 1. The Web/E-Government Domain has dependencies with the Application Domain. Please utilize both sets of standards when creating any website or application that will be available online.

Best Practice 2. **"**DoIT Payment Service" must be used by State agencies when developing websites and/or applications that need to process Credit Card transactions. This payment service uses PayPal Payflow Pro API to communicate with PayPal, the secure commercial Credit Card processing tool.

Best Practice 3. The use of Adobe Flash is limited to only creating animated introductions and features on existing websites and for video. Flash cannot be used to develop interactive websites or applications. Special consideration should be given to ensure accessibility of any Flash content.

Best Practice 4. Within this domain, Web browser standards are set for development, testing, and production. These are the minimum web browser requirements that websites and web applications being created for state business should function within.

Best Practice 5. It is the policy of the State of Connecticut to ensure that people with hearing, visual and other disabilities have equal access to public information that is available on the Internet and the Web to ensure access.

Best Practice 6. Federal Rehabilitation Act Section 508 standards must be incorporated On state funded websites.

Best Practice 7. It is the direct responsibility of the agency and its web page developers To become familiar with the guidelines for achieving universal accessibility and to apply these principles in designing and creating any official State of Connecticut Website.

Best Practice 8. Testing tools should be used to validate a site's adherence to Section

53 "DOIT: Best Practices. (June 25, 2010). Retrieved September 28, 2010 from http://www.ct.gov/doit/cwp/view.asp?a=1245&q=462172

508. Recommended tools are available at: http://www.access.state.ct.us/tools.html.

Best Practice 9. CT.gov "branding standards for new websites or applications is available at the end of this document. (See Figure A – C).

Best Practice 10. Agencies should review the CT.gov Website Guidelines for more details on home page content standards.

Best Practice 11. Data Validation must be written into all online forms.

Best Practice 12. A security assessment should be performed on all new websites and Applications that collect information or were developed in a Programming language. (Refer to Security Domain Document and Application domain Document).

Best Practice 13. All websites and applications should have a valid privacy policy that Meets the requirements of the application or website where it resides. CT.gov policy can be used or modified as needed to ensure policy Compliance. (Refer to Application Domain document).

Best Practice 14. All applicable policies should be reviewed prior to creating any new Websites and applications (including social networking websites) (Refer to the State of Connecticut Policies Relevant to this Domain).

Best Practice 15. Content on websites and applications should be reviewed, at a minimum, on an annual basis. Outdated content should be removed or modified.

Best Practice 16. Content no longer needed should be deleted from web servers. Web servers should not be used for archive purposes. All content that needs to be saved and stored for record retention should be housed locally at the agency.

Best Practice 17. Websites that are no longer being used must be taken offline and the Domain name should be redirected to an active website."

Appendix K

System Development Methodology (SDM)

One significant policy change DOIT has established for information technology projects is the use of the system development methodology (SDM). The purpose of SDM is to institute uniform procedures to promote consistency in practices and controls used in the planning and execution of IT projects that result in more efficient project timelines and costs. The SDM is used in conjunction with existing policy and guidelines for acquisition and procurement.

In June 2008, Governor Rell issued Executive Order 19 requiring the use of DOIT's System Development Methodology (SDM) for all information technology projects in the executive branch, with the exception of state institutions of higher education. (SDM does not apply to the Judicial or Legislative branches of government.)

Currently, there are four SDM variations available for projects depending on the size and scale of the project. As shown in Figure K-1, these include SDM Standard, Lite, Commercial-Off-The-Shelf (COTS) and Rapid Application Development (RAD). Every technology project is required to use SDM, with the exception of a project where all the following criteria apply:

Figure K-1. Four SDM Variations

SDM-Standard: used for large or complex custom-development or infrastructure projects

SDM-COTS: used for projects pursuing the purchase of commercial-off-the-shelf (COTS) business applications

SDM-Lite: used for smaller, lower-risk application development or infrastructure projects meeting the SDM-Lite criteria

SDM-RAD: used for fast-paced, rapid application development projects using an iterative or "spiral" development model.

- Estimated cost is less than $50,000;
- Duration is expected to be less than 8 weeks;
- Project involves a single agency;
- A single application interface is used;
- Only one dedicated database is utilized.

Furthermore, SDM projects are subject to monthly project reviews if one of the following applies:

- Total project costs are $1 million or greater;
- Duration of 6 months or more;
- Involves an enterprise-wide project; or
- CIO specifically selects for review.

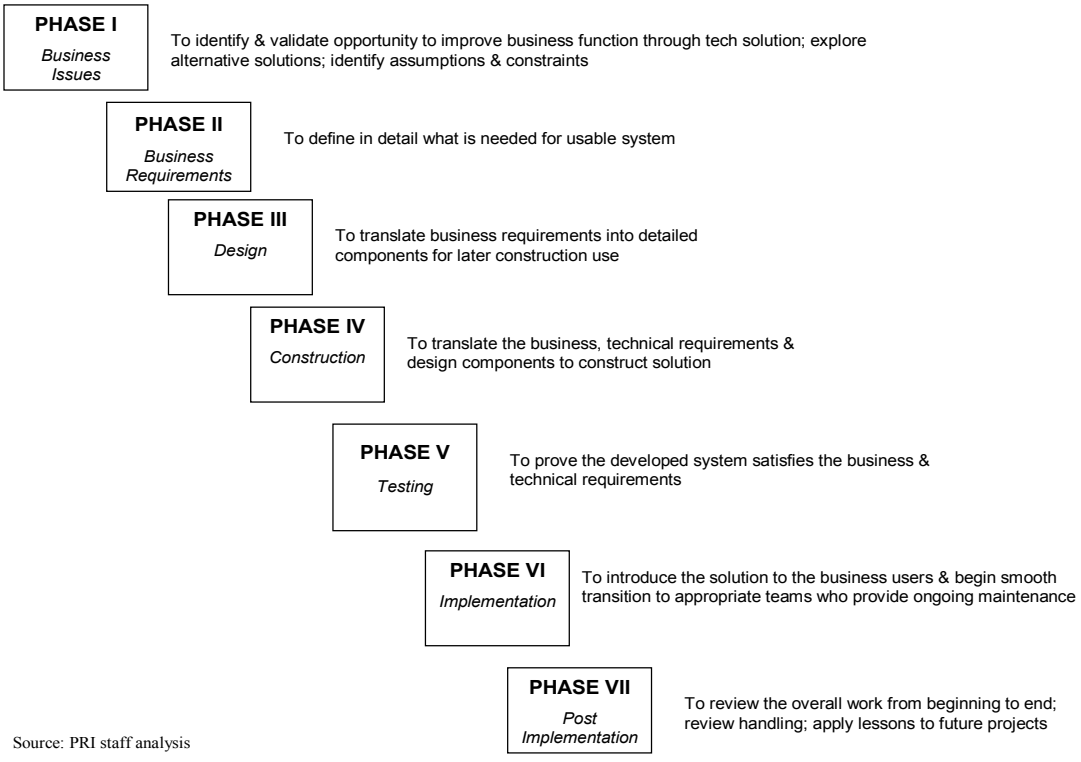
The implementation of SDM should yield several benefits including that it allows the state to be aware of projects across agencies. The process may foster better coordination, eliminate redundant efforts, and help leverage interagency and statewide investments. It should also assist in remediating risks and problems and holding vendors accountable. It also avoids project scope creep.

Through the use of SDM, each IT project has a defined project plan overseen by an identifiable project manager and clearly assigned roles for a range of project responsibilities. The process requires sign-offs at each phase in order for project to proceed, re-direct, or stop based on a review of results and continued need. SDM requires documentation to record all decisions.

Three of the four SDM process variations include seven phases (See Figure K-1). Depending upon the size and complexity of the project, phases may be combined or overlap (requiring DOIT approval). Every advance to the next phase requires a reasoned "Go/No-Go" decision, and a formal sign-off from the executive sponsor. Cost-benefit data and analysis should become more detailed at each phase.

Milestones for the start and end date of each SDM phase are established in the business issues phase as a component of the project management plan. The plan is presented to the Project Steering Committee (PSC) at the phase end decision point meeting. A "go" decision from the PSC will confirm the dates. These dates cannot be changed without the approval of the PSC.

Figure K-2. DOIT's System Development Management (SDM) Phases



Source: PRI staff analysis

STATE OF CONNECTICUT

BY HER EXCELLENCY

M. JODI RELL

GOVERNOR

EXECUTIVE ORDER NO. 19

WHEREAS, the State of Connecticut spends millions of dollars each year on the acquisition, design, development, implementation, and maintenance of information systems vital to the health, safety, and welfare of its citizens; and

WHEREAS, ensuring information systems deliver as expected and within established costs and timelines requires the use of a consistent set of development practices and methods; and

WHEREAS, use of a System Development Methodology is a best practice used extensively by industries and sectors; and

WHEREAS a System Development Methodology can help ensure that information systems meet state and agency mission objectives, are compliant with current and planned technical architecture, and are easily maintained and cost-effective to enhance.

NOW THEREFORE, I, M. Jodi Rell, Governor of the State of Connecticut, acting by virtue of the authority vested in me by the constitution and by the statutes of this state, do hereby **ORDER** and **DIRECT** that:

The Department of Information Technology (DOIT) issue and publish a System Development Methodology (SDM) and an SDM Policy for the development of information systems;

Executive branch agencies, and all information technology vendors and consultants retained by Executive Branch agencies to develop and deliver technology, with the exception of State institutions of higher education, conform to the DOIT SDM and the DOIT SDM Policy when planning and executing IT projects; and

The Department of Information Technology shall periodically report to the Office of the Governor on the implementation of the SDM and the SDM Policy and their benefits to the State of Connecticut.

Dated at Hartford, Connecticut, this 19th day of June, 2008.

M. JODI RELL
Governor

By Her Excellency's Command

Susan Bysiewicz, Secretary of the State

Appendix L

E-Government 2006 Application Inventory

Ask a Question

- Ask a Question of the Ct State Library

Motor Vehicles and Transportation

- Find your auto emissions test date and location
- Track a flight using the Bradley Airport Flight Tracker
- Download a Map
- Moved? Register you e of address with the Department of Motor Vehicles
- Order Information on Alternative Transportation Options and Ideas
- On-Line "Vanity Plate" Lookup
- On-Line Driver's License Practice Test
- Find a Park and Ride Location

Taxes

- File Your Personal Income Tax Return On-Line
- Files Sales and Use Taxes On-Line
- Business and Other On-Line Tax Filing

Employment

- Job Seeker? Post your resume and set up an on-line career account
- File an Unemployment Claim
- Hiring? Post available jobs and search for candidates

Education and Learning

- Open a College Savings Account online with the Connecticut Higher Education Trust
- Visit the Connecticut Digital Library
- Plan for College at CT Mentor
- Apply to state colleges and universities on-line
- Take a course or get a degree on-line from state colleges and universities
- Take a sample online learning course with the CT Distance Learning Consortium

Boards and Commissions

Want to be considered for appointment to a state board, council, commission or task force? Register with a Talent Bank sponsored by various state commissions. Each commission reviews applicants and makes recommendations to the Governor and Legislative Leaders as vacancies occur.

- Permanent Commission on the Status of Women Talent Bank
- African-American Affairs Commission Talent Bank

- Latino and Puerto Rican Affairs Commission Talent Bank

Health Care/Child Support

- Health Care Complaints
- Online Complaint Form for the Mental Retardation Ombudsman
- Contact State Judicial Branch Child Support Enforcement Services

Consumer

- Get on the "no-call list" for telemarketers
- Check the CT Unclaimed Property Owner's List
- Is Your Home Improvement Contractor Licensed?
- Check the license status in other professions
- Utility Complaints
- Shop On-Line at the Department of Environmental Protection Store
- Saving/Investing Information, Including On-Line "Ball Park Estimator"
- Is money waiting for you? Search Revenue Services Database of Uncashed Tax Refund Checks

Business

- Starting a business? Register for Free Assistance from Smart Start
- Biz Quiz – On-Line Checklist for Business Registration
- Enroll for e-services from the Judicial Branch
- Business Registration and On-Line Tax Filing
- Register to be notified for State Purchasing Opportunities

Outdoors and Recreation

- Make state campground reservations on-line
- Report a Black Bear Sighting
- Oder a Copy of the Connecticut Vacation Guide

Appendix M

DOIT Created Agency IT Plan Template

Draft IT PLAN TEMPLATE
DOIT

STATE OF CONECTICUT

DEPARTMENT OF XXX

INFORMATION TECHNOLOGY PLAN
(Connecting the Business Drivers to the Technical Objectives)

For the Period of January 1, 2008 to June 30, 2011
Including FISCAL YEARS 2010-2011

DATE

Name
IT Manager

Name of Assigned Superior
Title of Assigned Superior

1

Table of Contents (if over 10 pages)

1. Executive Summary

The Executive Summary clearly states in simple non-technical terms the major benefits and risks of the existing IT environment and what must be done over the next two and a half years to maximize those benefits and minimize those risks. Highlight the major opportunities (e.g. unsupported systems to enterprise services) and challenges (i.e. budget, staffing shortages or upcoming retirements).

2. Mission of Agency

The mission statement should reflect the overall mission of the department that is generally found on the Department's website, the DAS Administrative Digest or the Governor's Proposed Budget. Go to either http://www.das.state.ct.us/Digest/Digest_2006/default.htm or http://www.ct.gov/opm/cwp/view.asp?a=2958&q=382890&opmNav_GID=1793.

3. Major Initiatives within Department (Business Priorities)

The major initiative's section should reflect the major goals the department has outlined in its business strategy for the coming fiscal year or years. This may be outlined in the department/agency Strategic Plan or may be found in the department/agency Business Plan. When writing this section, make sure to work with your key business partners to ensure that they agree with what you are outlining in this section. This is very critical to have buy in from your business customers to make this work. If your department/agency does not have a Business Plan or Strategic Plan, it is important to meet with your key business customers to come up with a plan.

This section may also reflect future initiatives that may affect the plan during the fiscal year/years of the plan. Future initiatives may very well have to be planned for during this time cycle and should be reflected.

4. Mission of MIS

The title should reflect the name of your particular unit, whether it be MIS, IT, Operations, etc. This section should reflect what your unit does. It is a brief narrative outlining the mission of the IT area of the department/agency.

5. Public Service

The Public Service section should outline what services your particular unit provides to the general public. This is a brief narrative describing information or help that your unit assists the general public in.

6. Major Projects and Special Events (including Accomplishments and Technical Objectives)

This particular section should outline all of the major projects that your unit/staff have been involved in during the last year as well as the major projects you be will engaged in during the life of this plan. If a particular projects crosses over from last years plan to this one, outline what has been accomplished to date and what you are working as part of the project in the future.

This section provides a narrative description of your projects. Where do they stand and what challenges you might face? It should also outline when the project is to be completed and what deliverables might be involved.

With the introduction of System Development Methodology, provide the agency with information regarding how IT will improve planning and delivering projects based on the seven milestones for better tracking and accountability.

7. On-Going Projects and Support (Funded Projects / Baseline including Disaster Back up and Recovery)

This section should outline those projects that have been completed and require day to day maintenance and support. This may include maintaining your current applications, providing help desk support, providing ad hoc reports to customers, etc.

8. Planning Goals and Priorities (Resource Plan and Allocation with Project Lead)

This section outlines in bullet form or similar to that the list of tasks that you are striving to achieve during the life of this plan. The bullets should reflect the Major Projects and Initiatives that you have outlined above. They may also reflect support goals and priorities that you may have.

9. Governance

Describe how priorities are set in the agency and what necessary changes are required to have the Commissioner and agency business leaders set a clear direction for IT. The Committee also allows the IT manager to report on the status of progress the unit is making. Best practice dictates that a Steering Committee should meet and discuss conflicting priorities to establish the projects that are most important to the agency.

10. Succession Planning

Since succession planning is critical component of being able to accomplish the department/agency strategic initiatives, this has been included in the IT Planning document. It can also be separated out for general purposes, but it provides the department with an overall strategy of how IT is handling succession planning and what steps and measures are being taken to ensure this process is successful. The plan not only

outlines what your goals and objectives are, but it also breaks into three sections for Retirement Planning, Single Points of Failure, and Training Needs. This section may not be something you want to include in the IT Plan, but it is something that could very well be critical to the success or failure of your plan so you may very well want to incorporate it into this document.

11. Appendices

Include any additional documentation that may be helpful for background.

Appendix N

Useful WebTrends Reports

To help you with the management of your website, we find the WebTrends reports listed below to be useful. We recommend using a year's worth of data to get a respectable sampling of the trends on your site. The reports that we find most helpful are as follows:

Top Pages:
This report lists the most viewed pages in your website. (If there were 0 hits, it will not appear on this report.)
This report can be found under "Site Design" → "Pages and Files" → "Pages".

Most Downloaded Files:
This report lists the most downloaded files from the most downloaded to the least. By design, this report does not track images, style sheets, or javascript. (If there are 0 hits, it will not appear on this report.)
This report can be found under "Site Design" → "Pages and Files" → "Downloaded Files".

Top Entry Pages:
This report lists the pages that are the first pages hit by visitors to your site. Usually, the home page is the highest one listed, but below that, you can see other pages where people start to explore your site. This may be the result of bookmarks or links from other sites. How are people entering your site? What is the first page they see? Is the first page they see one that will encourage them to explore your site further?
This report can be found under "Site Design" → "Navigation" → "Entry Pages".

Top Exit Pages:
This report lists the page visitors were on when they left your site. This helps you to understand where people were when they decided to leave your site. If you notice an odd place for visitors to be leaving your site, you may want to see if you can figure out why. (Are they confused? Is there a link to another site? Are they not finding the information they are looking for?) And that may help with some of the design aspects of your site.
This report can be found under "Site Design" → "Navigation" → "Exit Pages".

Activity By Referring Page:
This report shows where visitors were directly before they came to your site. This is more of an informational report. This report just shows where people are coming from when they visit your site. This may give insight into your customer base or how you structure your navigation.
Please note that "Direct Traffic" is one of the listed options on the report. "Direct Traffic" represents traffic to your web site with no referrer, which is one of the following:

1) the visitor typed the domain name directly into their browser
2) the visitor bookmarked the site
3) the visitor clicked on an email, shortcut, or other direct link
4) Firewalls and/or proxies stripped out the referrer and replaced it with a dash "-".

This report can be found under "Marketing" → "Referrers" → "Referring Page".

Top Search Phrases:
This report and the next are useful for Search Engine Optimization (SEO). "Search Phrases" shows which phrases, when typed into a search engine, produced results that led to people visiting your site. This report shows what the actual search term was in its entirety. Are people using the search phrases you expect?

Another interesting feature of this report is that each search phrase listed is expandable. When expanded, the report shows which search engines the phrase was typed into.

This report can be found under "Marketing" → "Search Engines" → "Search Phrases".

Top Search Keywords:

This report is similar to the "Top Search Phrases" above. It shows which individual words were used most frequently to find your site through the search engine. You may also find that some search engines use words you would expect to find your site, while others don't.

Please note that just because the report is entitled "Search Keywords", it is not referring to the keywords on your site. It refers to the words entered into the search field by users.

This report can be found under "Marketing" → "Search Engines" → "Search Keywords".

Browsers By Version:

This report lets you know which browsers (and the respective versions of those browsers) visitors are using to view your site. This information is useful when determining cross-compatibility with features on your site. You want the most visitors as possible to be able to use your site.

This report can be found under "Site Design" → "Browsers and Systems" → "Browsers By Version".

Platforms:

This report is used much like "Browsers By Version" (above), but this one describes the platforms your visitors are using (Windows XP, Linux, Macintosh, etc.) This report can help you in the design of your site as well. Are you using a cross-platform product to add new features? If not, how many visitors will not be able to take advantage of your information?

This report can be found under "Site Design" → "Browsers and Systems" → "Platforms".